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UNION OF SOUTH AFRICA



# ANNUAL REPORT

OF THE

# DEPARTMENT OF PUBLIC HEALTH

Year Ended 30th June, 1926

*Published under Authority, and Presented to both Houses of Parliament*

PRETORIA

THE GOVERNMENT PRINTING AND STATIONERY OFFICE

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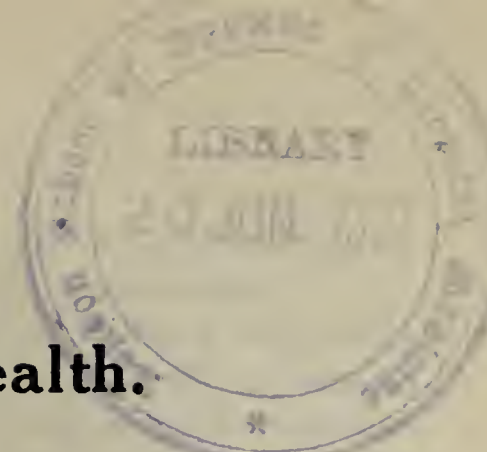




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# Department of Public Health.

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ABRIDGED REPORT FOR THE YEAR ENDED 30th JUNE, 1926.

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Secretary for Public Health and Chief Health Officer for the Union :  
J. ALEXANDER MITCHELL, M.B., CH.B., D.P.H.

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## I.—INTRODUCTORY.

1. *General Remarks.*—The last annual report was criticized in certain quarters because of its “tabloid” nature and because the opportunity it afforded for conveying educative information and “homilies” on special matters was not adequately utilized. The report was, however, an abridged one, although this was not specified in the title; it was cut down to fit a limited space in the volume of Annual Departmental Reports published by the Government. What is aimed at in framing these reports is that they should be concise, simple, and businesslike accounts of the work and activities of the Department, supplemented by brief accounts of, or comments or suggestions regarding, matters of special importance. They reach directly a limited public only, and are published during the Parliamentary Session with batches of other reports to which the public Press is usually unable to devote much attention or space, so that they are probably not the best media for health publicity and educative matter. This report has been framed on the lines of previous reports, but to avoid future misunderstandings the word “abridged” has been included in the title.

From the Public Health viewpoint the past year has been comparatively uneventful; the most noteworthy features have been the decision of the Government not to give effect to the recommendations of the Public Hospitals Inquiry Committee summarized in the last report, and, in the latter months of the period, an extensive spread of plague infection amongst the veld rodents of the north-western Cape districts, especially Williston, Fraserburg, and Calvinia.

2. *Staff.*—No changes of importance occurred during the year.

3. *Council of Public Health.*—Under Section 4 of the *Public Health Act*, 1919, members of the Council are appointed for three-year periods. The second three-year period terminated on 30th June, 1925, from which date a new Council was appointed, comprising: Miss Mabel Elliott, Messrs. J. H. Nicolson and M. C. Vos, Drs. Chas. Porter, S. M. de Kock, E. Hill, and W. Watkins-Pitchford (alternate, Sir Spencer Lister), with the Minister of Public Health as chairman, and the Chief Health Officer as member and deputy-chairman, *ex officio*.

Miss Elliott resigned in June, 1926; her successor has not yet been appointed.

A meeting of the Council was held at Capetown on 2nd and 3rd March, 1926; the Resolutions passed and a note of the more important matters discussed are shown in Annexure “A.” During the year, Dr. Charles Porter made a tour round the world, in the course of which, at the request of the Government, he inquired into plague matters in the Netherlands East Indies and California, U.S.A., and visited the Kalihi Leper Asylum, Honolulu, Hawaii, furnishing the Department with very able and useful reports thereon.

4. *International Health Matters and Epidemic Intelligence System.*—The Epidemic Intelligence Bureau established by the Health Organization of the League of Nations at Singapore, and referred to in the last annual report, commenced operations in July, 1925. Weekly code cablegrams regarding epidemic diseases are sent to the Bureau from all countries in the “Eastern Area,” including India, the Far East, Australia, New Zealand, the East Coast of Africa, and the Union of South Africa. A summary of these is prepared by the Bureau and transmitted in code, by cable or wireless, to all countries concerned. Through this arrangement this Department receives timely information of outbreaks of epidemic disease occurring anywhere in the “Eastern Area.” The system is working well, and is distinctly useful in connexion with health administration at Union ports.

In connexion with the proposed International Sanitary Conference referred to in the last annual report, during his stay in Europe on vacation leave in September and October, 1925, Dr. Mitchell attended, with Dr. P. G. Stock of the British Ministry of Health (formerly Director of Medical Services of the Union, and now the representative of the Government of the Union on the committee of the Office International d’Hygiène Publique, Paris), an inter-departmental conference at the Ministry of Health, London, which was also attended by a representative of the Health Department of the Commonwealth of Australia. At this conference outstanding points in the draft new Convention were discussed. Later Dr. Mitchell, with Dr. Stock, attended a session of the committee of the “Office International” at Paris, at which certain matters relating to the draft Convention were further discussed, and submitted to the committee a memorandum (Annexure “B”) dealing with matters of special importance from the point of view of South Africa, and including suggestions for amendment of the draft in certain directions. The conference assembled at Paris on 10th May, 1926, seventy states being represented; Dr. Stock acted as representative of the Government of the Union. It concluded its sittings on 21st June, 1926, after the revised Convention agreed to by the conference had been signed by fifty-three of the delegations; those postponing signature did so, not on any point of principle, but because they had not previously been authorized to sign, so that, save for a few minor reservations by certain countries, complete unanimity was achieved. Dr. Stock transmitted his report of the proceedings, together with a copy of the new Convention, and after consideration of these by the Government of the Union he was authorized to sign the Convention on its behalf, subject, of course, to formal ratification by Government later. The new Convention is a very great advance on that of 1912, and goes far to bring international health provisions with regard to shipping and so forth into line with modern conditions and modern knowledge of the epidemiology of disease; it also omits certain restrictions, under special circumstances, on the freedom of action of governments, which were the main grounds for this Government’s declining to become a party to the Convention of Paris of 1912. The suggestions put forward on behalf of the Union Government have been very largely incorporated, and it is considered that the acceptance of this Convention will be definitely advantageous to South Africa as regards obtaining prompt information of outbreaks of epidemic diseases in other countries, reciprocal understandings with other countries as to measures in respect of shipping, and in a number of other directions. The Convention, in effect, makes the “Office International” at Paris the central clearing-house for epidemic information, it being contemplated that in this connexion the “Office” will work in co-operation and consultation with the Health Organization of the League of Nations at Geneva; negotiations

between these two bodies as to such co-operation, and the definition of their respective duties and responsibilities, are proceeding.

The Union epidemic and health intelligence system, comprising the publication of weekly health bulletins, and the furnishing to the larger local authorities of more detailed weekly returns with regard to prevalences of infectious disease, continues to work satisfactorily.

Arrangements have also been made for utilizing, when required for the dissemination of urgent health intelligence, the broadcasting system organized by the Department of Posts and Telegraphs.

5. *Parliamentary Session, 1926: Matters affecting Health Department.*—*The Medical, Dental, and Pharmacy Bill*, which had been reintroduced and read for the first time during the 1925 Session, was the subject of a protracted debate on the second reading, but no further progress was made with it.

A *Public Health Act Amendment Bill* was introduced and read for the first time. The object of this Bill is to amend Act No. 36 of 1919 in a number of respects, the more important being: the exemption (subject to certain conditions) of conscientious objectors to vaccination; making the magistrate of the district the local authority for alluvial diamond diggings; the more effective control and supervision of midwives and of nursing and maternity homes; and empowering of the Minister to establish out-stations to be visited periodically by district surgeons at Government expense.

A *Local Government (Provincial Powers) Bill* was introduced, and became law as Act No. 1 of 1926. This Act validates acts done by certain Public Health Committees appointed under Ordinance No. 7 of 1923 (Natal) which has been held by the Supreme Court to be *ultra vires*, and empowers Provincial Councils to legislate in respect of the local government of, or the preservation of public health in, areas within their respective Provinces, and for that purpose amends Section 85 (vi) of the *South Africa Act, 1909*, by widening the scope of the phrase "local institutions of a similar nature."

Other Acts passed during the Session which have a bearing on the work of this Department are the *Dairy Industry Act, 1918*, *Amendment Act* (No. 14 of 1926), and the *Local Loans Act* (No. 19 of 1926).

6. *District Surgeons.*—The following table shows the position at 30th June, 1926:—

TABLE A.—DISTRICT SURGEONS AS AT 30TH JUNE, 1926.

Province.	Whole-time.	Whole-time, but jointly with Local Authority or Public Body.	Part-time.		Total.
			On Inclusive Annual Salary.	On Annual Salary with Certain Supplementary Fees and Allowances.	
Cape.....	3	4	1	134	142
Natal.....	2	—	—	38	40
Transvaal.....	2	—	7	46	55
Orange Free State.....	—	—	—	45	45
UNION.....	7	4	8	263	282

The seven whole-time officers are those at Cape Town, Port Elizabeth, East London, Durban (2), and Pretoria (2); the four whole-time officers appointed jointly with local authorities or public bodies are those at Kimberley, Grahamstown, Queenstown, and Wynberg.

Representations urging the establishment of a considerable number of new district surgeoncies, including the re-establishment of several which had

been allowed to lapse, have been made during the year. It has been decided to re-establish district surgeoncies at Loxton, Postmasburg, Venterstad, Vosburg, Messina, and Erasmus, and steps are being taken accordingly.

The fact is often overlooked that district surgeons are appointed solely for Government medical work, in connexion with accidents, assaults, and other medico-legal cases, paupers, medical attendance on Police and Gaol officials, and so forth, and that under the present laws no responsibility devolves on the Government to provide medical facilities for the general public. District surgeons' appointments and arrangements, however, have always been made so as to fit in as far as reasonably possible with the interests of the public, provided no extra cost was entailed. For several years past in certain districts (especially in malarious areas in the Northern Transvaal), a system has been in operation under which the district surgeon periodically visits certain out-stations at fixed times, incidentally carrying out any Government medical work in the neighbourhood, and being available for private consultation by the public at his ordinary headquarter rates, travelling allowance to and from the out-station being paid by Government. This system is welcomed by district surgeons, and has proved very useful in meeting the needs of localities remote from medical aid and with a population not sufficient to provide a living for a local medical man. The Controller and Auditor General, however, takes the view that under the present laws the Government has no authority to incur expenditure by subsidizing medical facilities for the general public; in order to regularize the matter and render it possible to extend the system where deemed necessary, a special empowering clause has been included in the *Public Health Act Amendment Bill* now before Parliament.

7. *Local Authorities and their Health Staffs.*—Table B shows the numbers of the various classes of local authorities under the *Public Health Act* as at 30th June, 1926. Eight local authorities, namely, the Bloemfontein, Cape Town, Durban, East London, Johannesburg, Pietermaritzburg, Port Elizabeth, and Pretoria municipalities, have whole-time medical officers of health. The Kimberley Board of Health, jointly with the Kimberley municipality, has a medical officer who devotes some of his time to laboratory work at the Kimberley Hospital, but does no private practice. At Queenstown and Grahamstown there are officers who act as health officers to the municipal and divisional councils and carry out the duties of district surgeons, but do no other medical work.

On the 30th June, 1926, there were 52 local authorities, namely, 27 in the Cape, 4 in Natal, 6 in the Orange Free State, and 15 in the Transvaal, employing certificated sanitary inspectors devoting the whole of their time to sanitary work. This is an increase of six, as compared with the previous year's figures.

TABLE B.—LOCAL AUTHORITIES UNDER THE PUBLIC HEALTH ACT (1919) AS AT 30TH JUNE, 1926.

Province.	Municipalities.	Village Management Boards.	Local Boards.	Village Councils.	Health Committees.	Magistrates.	Divisional Councils.	Board of Health.	Total.
Cape.....	129	76	18	—	—	29	89	1	342
Natal.....	9	—	14	—	—	42	—	—	65
Transvaal.....	22	—	—	31	27	37	—	—	117
O.F.S.....	60	5	—	—	—	32	—	—	97
UNION.....	220	81	32	31	27	140	89	1	621



## II.—WORK OF THE DEPARTMENT.

1. *Inspections, Investigations, and Field Work.*—The following is a summary of these activities of the health officers of the Department during the year:—

TABLE C.—NUMBER OF PLACES VISITED, MATTERS INVESTIGATED, AND DISTANCES TRAVELLED BY MEDICAL OFFICERS OF THE DEPARTMENT OF PUBLIC HEALTH: YEAR ENDED 30TH JUNE, 1926.

Province.	*J. A. Mitchell.	†Sir E. N. Thornton.	L. G. Haydon.	G. A. Park Ross.	F. C. Willmet.	W. A. Murray.	G. W. Robertson.	W. F. Wicht.	J. D. Wicht.	Total.
Systematic general inspections.....	—	—	—	11	1	21	—	—	1	34
Mines.....	—	—	—	20	—	—	—	—	—	20
Factories and works, including offensive trades	—	—	—	40	—	7	—	—	—	47
General and chronic sick hospitals under Provincial Administrations	—	1	1	6	—	6	—	—	—	14
Leper institutions and mental hospitals.....	5	—	—	5	3	—	4	—	—	17
Venereal hospitals, prisons, reformatories, etc.....	8	—	—	4	—	3	—	—	—	15
Water supplies.....	1	1	—	4	3	—	—	—	—	9
Drainage, sewerage, etc.	1	2	—	14	2	2	—	—	—	21
Housing nuisances and insanitary conditions..	1	5	—	17	1	—	—	1	—	25
Departmental inquiries..	—	—	—	1	—	3	—	—	—	4
Formidable epidemic diseases:—										
Plague, smallpox, typhus, etc.....	3	—	—	2	—	14	—	—	1	20
Other infectious or communicable diseases....	—	—	—	3	2	1	—	—	—	6
Other inspections, etc...	14	†88	20	48	12	10	—	—	—	192
Total number of places inspected and matters investigated, etc.....	33	97	21	175	24	67	4	1	2	424
Number of days absent from headquarters in that connexion.....	30	163	43	165	40	140	16	1	12	610
Number of miles travelled:										
By rail.....	5,830	12,000	5,000	1,746	5,200	20,000	6,500	—	1,200	57,476
By road.....	130	500	100	8,531	700	2,500	17	75	140	12,693
By sea.....	60	6,380	—	—	—	—	—	—	—	6,440

\* Absent in Europe on vacation leave from 9th August, 1925, to 22nd November, 1925, during which period attended, as representing the Union Government, International Conference at Brussels, *re* unification of formulae of powerful drugs and scheme for an international pharmacopoeia; Interdepartmental Committee on Draft International Sanitary Convention, London; Medical Committee, British Empire Leprosy Relief Association, London; Imperial Social Hygiene Conference, Wembley, London; Health Committee, League of Nations, Geneva; Office International d'Hygiène Publique, Session of Committee, Paris; and visited Ministry of Health and Colonial Office, London; School of Hygiene and Tropical Medicine, London; Tuberculosis Sanatorium, Papworth, Cambridgeshire; Treloar Cripples Home, Alton, Surrey; Pasteur Institute and School of Medicine, Paris; Pasteur Institute, Brussels, etc.

† Including 51 inspections and investigations in connexion with a study tour arranged by the League of Nations, and an inquiry into the plague position of Nigeria carried out at the request of the Government of Nigeria. Absent in this connexion from the 19th February to 18th August, 1926.

Dr. H. F. Sheldon, Assistant Health Officer, was on leave from the 29th May, and resigned as from 24th July. He made a large number of inspections and investigations, especially in connexion with malaria, during the period covered by the report, but has not furnished a return for the purposes of Table C.

2. *Addresses, Published Papers, and Special Investigations by Members of the Staff* :—

*Dr. J. Alexander Mitchell, Secretary for Public Health and Chief Health Officer for the Union* :

“Veneral Disease in South Africa.” Address, Imperial Social Hygiene Congress, Wembley, 7th October, 1925. (*Medical Journal of South Africa*, March, 1926.)

“Tuberculosis in South Africa (with Special Reference to Natives and Native Mine Workers).” Address, Medical Committee of the League of Nations, Geneva, 9th October, 1925.

“Leprosy in South Africa.” Address, British Empire Leprosy Relief Association, London, 12th October, 1925.

“Child Welfare.” Address, Annual Meeting, Child Life Protection Society, Cape Town, 7th May, 1926.

“Public Health Problems and Policy.” Address, Congress, Cape Municipal Association, Kimberley, 22nd June, 1926.

*Dr. G. A. Park Ross, Assistant Health Officer* :

“Health and Hot Weather.” Address, Sanitary Association, Durban, 18th February, 1926; St. John’s Ambulance Association, Durban, 18th March, 1926.

“Malaria and the Low Veld.” Paper read at Imperial Institute, Johannesburg, October, 1926.

“The Precipitation and Purification of Vat Lees.”

“Fumigation with Cyanide Gas combined with a Tell-tale Gas, with special apparatus.”

*Dr. H. F. Sheldon, Assistant Health Officer* :

“Leprosy.” Paper read before the Medical Congress, Pietermaritzburg, 1925. (*S.A. Medical Journal Record*, October, 1925.)

*Mr. W. Powell, Chief Rodent Inspector* :

“Photographing, Skinning, and Preserving of Wild Animals and Birds.” Paper sent to the London School of Hygiene and Tropical Medicine for publication.

3. *Health Publicity and Educative Work*.—The following were published and distributed by the Department during the year :—

“Prevention of Plague.” Poster in Sechuana, Sesuto, Xosa, and Zulu. No. 331 (Health).

“Bilharzia (Human Redwater) Disease.” Pamphlet. No. 339 (Health).

“Plague Research.” Interim Report by Drs. Pirie and Ingram. No. 341 (Health).

In connexion with this section of the Department’s work, a publicity clerk, who also acts as translator and librarian, was appointed on 1st August, 1925.

A number of the leading newspapers in the Union, both English and Afrikaans, have kindly agreed to publish periodically short notes on current health matters to be supplied by the Department; such notes have already been published on malaria, bilharzia (human redwater) disease, plague in man and rodents, and conditions in South African hotels.

Annual grants-in-aid, largely for publicity purposes, are made to the Cape and Transvaal branches of the Social Hygiene Council (formerly the National Council for Combating Venereal Diseases); also to the Lovedale Health Society, which issues a monthly health journal and occasional leaflets to natives. During the year a grant of £400 was made to the St. John’s Ambulance Association as a contribution towards the cost of translating into Afrikaans and printing the Association’s booklets on “First Aid” and “Home Nursing,” with the promise of a future grant of £150 per annum, subject to the Association’s organizing and carrying out to the satisfaction of the Department a system of lectures and health publicity work in the smaller centres of the Union. A grant of £25 was made to the Swiss Mission in the Transvaal as a contribution towards the printing and publication of a booklet on hygiene, in Shangaan and Thonga, prepared by the Rev. A. Jacques.

The bulk of the edition of 1,000 copies of Dr. A. W. Reid's handbook, "Sanitation and Public Health," published at the cost of this Department in 1923 (see annual report for year ended 30th June, 1924), has been sold out. Dr. Reid has prepared for printing a revised and enlarged edition, with additional illustrations. The cost of printing this edition in English, and of translating and printing it in Afrikaans, will be about £750; it has been decided, subject to Treasury approval, to meet this expenditure from the Department's Vote.

By arrangement between the Department, the Transvaal Red Cross Society, and the Director of the Transvaal Museum, Mr. Austin Roberts made an extended lecture tour in connexion with plague in certain districts of the Cape, Orange Free State, and Transvaal, travelling by the Red Cross Society's special motor van, equipped with cinematograph apparatus, specimens of and apparatus and materials for destroying plague-carrying rodents, etc. Forty-two towns and villages were visited and 53 lectures and demonstrations given, the total attendance numbering 10,000 persons. By arrangement with the Department, Mr. FitzSimons, Director of the Port Elizabeth Museum, gave a series of illustrated lectures and demonstrations on "Plague and Its Control" and "Our Wild Bird Allies" in Bedford, Cathcart, Cradock, Kingwilliamstown, Queenstown, Tarkastad, and Uitenhage. A large number of lectures and demonstrations in connexion with plague and other health matters were also given by officers of the Department. On behalf of the Transvaal Red Cross Society, Professor Cluver, with the Society's demonstration van, made a tour and gave a series of lectures and demonstrations on malaria in the northern Transvaal.

The Department has imported several cinema films dealing with venereal diseases, the rat and its destruction, flies and their dangers; by arrangement with the African Films Trust, some of these films have been shown at all bioscopes throughout the Union.

Up to the present the Department's financial and other resources for health publicity and educative work have been very limited. It is strongly felt that more attention should be devoted to this matter. In the last analysis real progress in health matters depends upon the enlightening of the general public. It is hoped that more funds for such purposes will be made available in future.

4. *Sanitation, Water Supplies, etc.*—The carrying out of systematic general inspections of local authority areas has been continued during the year, with excellent results; a total of 46 such inspections was made. The Department aims at inspection by one of its officers of every urban and any special rural area of the Union every two or three years, but this is not quite practicable with the staff at present available. These inspections are very useful to and are welcomed by local authorities and their health officers; they are usually followed by informal conferences between the inspecting officer and the council or committee of the local authority. Thereafter the inspecting officer submits a report to the Department, which furnishes copies to the local authority (under suitable covering letter, calling attention to any defects or special matters requiring consideration), copies of the report and forwarding letter being simultaneously transmitted to the Provincial Administration concerned. The Department endeavours to assist local authorities in dealing with their local problems, and is often in a position to make helpful suggestions derived from experience in other centres where, under analogous conditions, similar problems have been successfully handled. In a few instances, where insanitary conditions

seriously endangering the public health have been found to exist, representations have been made to the Administrator for action under Section 11 of Act No. 36 of 1919.

Apart from these general systematic inspections, the Department makes many inspections and reports for local authorities, Provincial Administrations, and other Government departments regarding water supplies, drainage or sewerage schemes, night-soil removal and disposal arrangements, nuisances, and other matters.

### 5. Laboratories.—

TABLE D.—PATHOLOGICAL LABORATORIES : ANALYSES AND EXAMINATIONS, YEAR ENDED 30TH JUNE, 1926.

Particulars.	Laboratories.		South African Institute for Medical Research.
	Cape Town.	Durban.	
<i>Specimens examined for :</i>			
Government Departments—			
Agriculture.....	3	—	—
Customs and Excise.....	5	3	9
Defence.....	265	2	4,815
Finance.....	—	131	—
Interior (mental hospitals, etc.).....	540	83	71
Justice.....	212	435	824
Justice (Prisons).....	—	308	127
Mines and Industries.....	—	—	1,016
Mines and Industries (miners' phthisis).....	—	—	14,761
Mines and Industries (geological survey).....	—	—	—
Native Affairs.....	—	—	—
Posts and Telegraphs.....	95	4	—
Public Health.....	4,565	4,161	21,534
Public Works.....	—	7	—
South African Railways and Harbours.....	143	48	—
Other Government work.....	—	—	292
Provincial Administrations—			
General hospitals.....	1,708	9,496*	8,723
Local authorities.....	821	2,025	3,688
Medical practitioners.....	6,205	4,105	4,448
Members of the public.....	—	20	43
Other Governments or Administrations.....	290	35	23
Others.....	15	29	89
<b>TOTAL.....</b>	<b>14,867</b>	<b>20,892</b>	<b>60,463</b>
<i>Manufactures and Issues :</i>			
Autogenous vaccines.....	114	74	1,272
Bacterial vaccines (stock).....c.c.	9,250	—	707,656
Sera (various).....c.c.	—	—	231,944
Bulgarian milk cultures.....bottles	—	—	319
Insulin.....tubes	—	—	1,495
Smallpox vaccine—calf lymph (prepared at Vaccine Institute, Rosebank).....tubes	1,641,280	—	—
Attendances at courts of justice by members of staff...	4	51	115
Total days' absence entailed by such attendances.....	4	71	160

\* A large proportion of this work is in connexion with the Addington Hospital, Durban, and is done in conjunction with Dr. R. F. Johnstone, bacteriologist to the hospital.

The construction and equipment of the new wing to the Institute, Johannesburg, has been completed.

The accommodation in the Government laboratories at Cape Town and Durban is very unsuitable and inadequate. As regards Cape Town, it is hoped to secure for the purpose the Anatomy and Physiology Block of the old University buildings at the top of Government Avenue, which the University authorities are to evacuate shortly. As regards Durban, the old laboratory and office in Currie Road, Berea, are leaky and dilapidated, and not worth repairing; the intention is to demolish them and to erect new and suitable buildings on the same site as soon as funds are available.

6. *Port Health Administration.*—The following table summarizes health work at the Union ports during the year :—

TABLE E.—PORTS OF THE UNION : HEALTH ADMINISTRATION DURING THE YEAR ENDED 30TH JUNE, 1926.

Particulars.	Cape Town.	Durban.	Port Elizabeth.	East London.	Mossel Bay.	Knysna.	Port St. Johns.	Simons-town.	Total.
Vessels dealt with	920	1,267	609	623	464	46	57	70	4,056
Cases of infectious or communicable diseases dealt with....	44	61	3	—	—	—	1	—	109
Vessels involved	29	26	2	—	—	—	1	—	58
Disinfections—									
Vessels.....	21	9	2	—	—	—	—	—	32
Second-hand clothing and other articles	463	16,514*	5,353	—	—	—	—	—	22,330
Bales of mixed articles.....	32	119	7	—	—	—	—	—	158
Rats trapped on vessels and shore	9,154	3,225	4,573	661	137	—	—	—	17,750

\* In addition, the personal effects of 1,635 Indian and coloured passengers were disinfected.

Noteworthy occurrences during the year were :—

S.S. *Kamakura Maru* entered the harbour at East London on 17th June, 1925, without, it is reported, flying the quarantine flag as required by the regulations. On inspection by the port health officer, she was found to be in a filthy and insanitary condition and without proper precautions against rats. Written instructions regarding these matters were served on the captain, but were not carried out. Prosecutions were instituted, and the captain found guilty on four counts, a fine of £12. 10s. being imposed.

S.S. *Barrabool* arrived at Cape Town on 20th March, 1926, en route to Australia. The master and the ship's surgeon gave a clean certificate of health, but the attention of the port health officer was called to one of the passengers who had a few bullae on his face and trunk ; a provisional diagnosis of pemphigus was made. From information subsequently furnished by the Australian Health Department, it seems clear that this case was actually one of mild smallpox, and three further cases of that disease developed on board before the vessel reached Australia. The incident shows the need for the greatest vigilance and caution in connexion with this disease.

S.S. *Karapara* arrived at Durban on 16th June, 1926, and reported having landed at Zanzibar on 7th idem an Indian deck-passenger suffering from smallpox. The passengers and crew had been vaccinated or revaccinated at Lourenco Marques. On arrival at Durban an Indian deck-passenger was found with suspicious symptoms, and the patient and all Indian and other coloured passengers on board were removed to the Salisbury Island quarantine station. Within the next few days the suspicious case proved to be smallpox, and a further case developed and terminated fatally. The remainder of the passengers was detained under observation

for fourteen days from date of last exposure to infection, but no further case occurred amongst them. An unfortunate incident, well illustrating the infectivity of smallpox for those not protected by efficient vaccination, occurred in connexion with this outbreak. When the vessel arrived, the port sanitary inspector (a recent appointment), who is also caretaker of the quarantine station, was furnished with vaccine lymph and instructed by the port health officer to have himself revaccinated, as he had not been vaccinated since childhood. A week or so later he developed smallpox, and it was then found that he had failed to carry out the instruction; the attack was of severe and confluent type, but the patient eventually recovered.

No actual or suspected plague in man or rodents occurred in the Union ports during the year. At all ports the greatest vigilance is being maintained, systematic bacteriological examinations of rodents are carried out, and every effort is made to keep down the rodent population and safeguard against the introduction of infection, but the risks of such introduction are as great as ever. There is also risk of conveyance of plague infection to the ports from the inland areas where infection is enzootic in veld rodents. Fortunately, however, these rodents are very shy of man and are mostly nocturnal in their habits, and have very rarely been found in railway trucks. In consultation with this Department, much has been done by the Railways and Harbours Administration during the year, especially at Cape Town, where an expenditure of £16,500 for the purpose has been provided for, in demolishing old wood-and-iron buildings and shanties within the port area, replacing them with concrete rat-proof structures, and in other ways eliminating "rat cover."

A new type of rat-guard for mooring-cables has been devised by the Department and its use has been made compulsory by regulation in respect of vessels recently arrived from plague-infected or suspected ports; tests have shown that this guard is more effective in preventing migration of rats either to or from vessels than any hitherto used. The Department has made arrangements with certain firms for the manufacture and supply of these guards, and has also furnished shipping companies and all concerned with drawings and specifications.

7. *Adulteration of Food and Drugs.*—The following table shows the action taken in this connexion during the year:—

TABLE F.—ADULTERATION OF FOOD AND DRUGS, YEAR ENDED 30TH JUNE, 1926.

Province.	Samples Taken.	Samples Analysed.	Samples found Inferior, Deficient, or Adulterated.	Prosecutions.	Convictions.	Remarks.
Ports of Union...	65	65	4	—	—	Importers warned.
Cape Province...	1,408	1,406	60	58	46	Proceedings in one case not yet known. Adulteration laws administered by municipalities within their areas.
Natal.....	338	338	53	42	38	
Transvaal.....	625	625	42	—	—	
Orange Free State	173	173	6	4	3	
UNION:.....	2,609	2,607	165	104	87	

The need for new and effective legislation for preventing the adulteration of food and drugs has been urged in previous annual reports. The urgency and importance of the matter seems to justify a more extended statement of the position.

The existing laws on the subject are old, obsolete, and inadequate. That in the Cape Province dates from 1890, that in Natal from 1901, and that in the Orange Free State from 1906, the two last being based on the Cape Act which, in turn, was based on the old English Act of 1875. In the Transvaal, apart from short and practically useless enactments passed in 1896 and 1898, there is no general adulteration law, but municipalities have power to make regulations on the subject under Ordinance No. 9 of 1912.

The main object of the old Adulteration Laws was to safeguard the public health by preventing harmful adulteration. The position in this respect has, however, materially changed; deleterious adulterants, with the one exception of preservatives, are now rarely used. The principal object of the manufacturer or vendor of adulterated articles of food nowadays is to make money by selling spurious or misdescribed articles, or genuine articles adulterated with cheap but harmless ingredients, in other words, by defrauding buyers and consumers. In carrying out this object he makes full use of modern chemical science and every device which ingenuity can suggest. One illustration may be given: a large trade is done in coffee beans, many people preferring to roast their own coffee in the belief that in this way they secure the genuine article. But a large proportion of the raw coffee sold in the Union is faked. The Secretary for Public Health has seen a range of seventeen different samples imitating most types of coffee bean on the market, all prepared—by processes of polishing, painting, steaming, and treatment with wax—from one grade of cheap Rio coffee.

The present laws were not designed to meet the conditions now existing, and, apart from their general inadequacy, are very defective in certain particular directions. Except in the case of milk and dairy produce in two of the Provinces, they contain no powers for laying down standards of composition or purity. They contain no effective powers for preventing false description, or for securing the proper labelling of commodities. They contain many loopholes, defects, and ambiguities, often rendering it difficult or impossible to obtain convictions. As an illustration—in October, 1923, when butter was exceptionally scarce and dear, out of twenty-two samples purchased on the public market at Cape Town, six proved to contain from 11 to 23 per cent. of foreign fat, but owing to the loose and easily evadable provisions of the Cape Act with regard to “warranties,” it proved impossible to secure a conviction or to check effectively these disgraceful frauds. In the Cape Province there are certain limited and unsatisfactory powers to deal with spurious, misdescribed, or adulterated articles imported from overseas, but there are no such powers under the Natal law, and in that Province, even if the authorities know of the landing of falsely described or adulterated foodstuffs, nothing can be done until some one is caught selling them. In the Transvaal, as already mentioned, there are no general laws, and nothing whatever is done in regard to the matter except by the larger municipalities.

The samples of food and drugs taken and analysed under the Adulteration Laws of the Union for each year since 1st January, 1920, and the results, are :—

Year Ended.	Samples of Food and Drugs taken and Analysed.	Samples found Adulterated, Deficient, or Inferior.	
		Number.	Per Cent.
31st December, 1920.....	3,065	308	10·1
30th June, 1922 (18 months).....	4,837	347	7·2
„ 1923.....	3,419	239	7·0
„ 1924.....	2,730	139	5·1
„ 1925.....	3,010	150	5·0
„ 1926.....	2,583	165	6·4

These figures do not convey an adequate idea of the amount of adulteration, faking, and misdescription of foodstuffs which is going on, because under the present laws it is useless taking action except in certain classes of offences. Under present conditions the public and consumers are being defrauded to a serious extent, the public health is being prejudiced by the sale and use of deficient, adulterated, or spurious food articles, and the position is very unfair to the honest producer, manufacturer, and vendor. With the present obsolete and inadequate adulteration laws, it is impossible to safeguard effectively the interests of the public in connexion with this matter. Strong and repeated representations urging the need for amended legislation have been made to the Government by this Department, by chambers of commerce, by the Union Council of Public Health, and other bodies, but so far very little progress has been made. At the request of the Government a draft consolidating and amending *Food, Drugs, and Disinfectants Bill* was prepared by the Secretary for Public Health in 1917, after special investigation and inquiry, and after preliminary scrutiny by the Government Law Advisers, was printed and published in 1923 [C. 1110 (2)—'23], copies being furnished to the larger municipalities, chambers of commerce, and other bodies specially concerned for their information, criticism, and suggestions. The reports of these bodies were very favourable, though some minor alterations were suggested; all agreed as to the urgent need for legislation on the lines of the draft Bill. Since then the matter has been brought up for consideration annually when the Government's programmes of legislation were being prepared, but the Bill has not yet been introduced to Parliament.

### III.—INFECTIOUS, COMMUNICABLE, AND PREVENTABLE DISEASES.

1. *Notifications*.—The following table shows the notifications of infectious diseases by medical practitioners during the year, the total for the previous year being inserted for comparison. It is to be noted that many cases of such diseases, especially in natives, are never seen by a medical man, and consequently are not notified.

Trachoma was made a notifiable infectious disease throughout the Union as from 1st October, 1925.



TABLE G.—NOTIFICATIONS OF INFECTIOUS DISEASES BY MEDICAL PRACTITIONERS DURING THE YEARS ENDED 30TH JUNE, 1925, AND 30TH JUNE, 1926.

Disease.	Year ended 30th June, 1925.	Year ended 30th June, 1926.										
	Union.	Union.	Cape Province, excluding Transkei.		Transkei.		Natal.		Orange Free State.		Transvaal.	
			Total.	Total.	†E.	N.-E.	E.	N.-E.	E.	N.-E.	E.	N.-E.
Anthrax.....	49	40	7	5	—	8	—	—	1	8	5	6
Diphtheria.....	1,201	1,236	477	143	21	5	141	18	119	48	240	24
Encephalitis: Infective	44	52	9	6	—	—	2	—	5	16	3	11
Enteric or Typhoid Fever.....	4,390	4,454	1,032	1,134	5	36	221	263	194	136	713	720
Erysipelas.....	167	156	55	27	2	—	11	2	10	6	26	17
Glanders.....	2	—	—	—	—	—	—	—	—	—	—	—
Leprosy.....	58	82	2	17	—	2	1	20	1	4	5	30
Malta Fever.....	15	7	5	—	—	—	—	—	—	1	1	—
Meningitis: Epidemic Cerebro-Spinal.....	552	389	14	48	1	1	17	10	6	14	52	226
Ophthalmia—												
Gonorrhoeal.....	16	34	9	8	—	—	2	—	1	1	9	4
Neonatorum.....	132	201	29	117	—	—	8	12	8	8	14	5
Plague (for complete list of cases and deaths see Table M)	79	14	—	6	—	—	—	—	4	4	—	—
Poliomyelitis: Acute	21	12	3	3	—	—	—	1	2	—	3	—
Puerperal Fever, including Puerperal Sepsis.....	155	225	50	73	2	—	2	21	12	6	49	10
Rabies.....	—	2	—	—	—	—	—	—	1	—	1	—
Scarlatina or Scarlet Fever.....	879	612	268	23	11	1	39	4	43	6	208	9
Smallpox (for complete list of cases and deaths see Table N.1)	108	72	5	24	—	7	—	—	—	7	1	28
Tuberculosis.....	4,634	4,826	379	2,035	—	543	128	433	26	75	74	1,133
Typhus (for complete list of cases and deaths see Table Q)	814	722	25	200	1	297	26	37	8	81	2	45
*Trachoma.....	—	33	6	21	—	—	2	1	2	—	—	1
TOTALS.....	13,316	13,169	2,375	3,890	43	900	600	822	443	421	1,406	2,269

\*Declared a notifiable infectious disease throughout the Union as from 1st October, 1925.

†E. = European. N.-E. = Non-European.

2. *Bilharziasis (Schistosomiasis)*.—During the past year the Department published in the daily Press a short article on the prevalence and causation of this disease in the Union. This article evoked widespread interest and numerous letters were received from all parts of the Union, and even from beyond its borders, requesting further information. Cases were cited where persons who had been infected twenty or more years ago were still suffering from the disease.

A pamphlet—No. 339 (Health)—was published about the same time, dealing more fully with the distribution, causation, symptoms, prevention, and treatment of the disease. Copies of this were forwarded to these correspondents and also to provincial administrations, educational authorities, local authorities, magistrates, and others interested. The pamphlet included a folding poster giving life-size illustrations of the snails which act as “carriers” of the infection, their natural enemies, the method of human infection, and the area of the Union involved.

The prevention of the disease is still a difficult problem. To be thorough, it should be dealt with under three main heads: (a) voluntary or compulsory "mass treatment" of sufferers (native as well as European) by tartar emetic; (b) destruction of snails by duck, fish, or clearing operations; and (c) prevention of bathing or paddling in or drinking from infested or suspected streams and pools. To carry out (a) and (b) thoroughly would be impracticable, apart from the cost involved. A good deal, however, is being done in many of the worst infested areas by the Education Department and by local authorities to warn scholars and the public generally, by means of posters, warning notices, and the Department's pamphlets, of the dangers of bathing in snail-infested streams or pools. The Transvaal Education Department also arranges for the treatment of infested poor scholars in certain areas. In others, the Provincial Administration pays for the treatment of indigent adults as well as scholars, when carried out in State-aided hospitals. Specimens of snails sent to the South African Institute for Medical Research, Johannesburg, are examined and reported on free of charge.

3. *Enteric or Typhoid Fever*.—The total number of notifications shows an increase of sixty-four as compared with the previous year's figures. No serious epidemics have occurred, but there has been undue prevalence of the disease in many urban areas, indicating the need for more attention to night-soil and refuse disposal, fly prevention, and the sanitation and cleanliness of yards and dwellings. The incidence rate of this disease is a fairly reliable index of the efficiency or inefficiency of the local authority in regard to these matters, and, tested in this way, many of the smaller and a number of the larger local authorities in the Union show up very badly. A pamphlet on the subject is being prepared by the Department and will be issued shortly.

The following table shows the notifications of enteric or typhoid fever in certain centres during the year, beginning with those in which the incidence rate has been highest:—

TABLE H.—TYPHOID OR ENTERIC FEVER : NOTIFICATIONS AND INCIDENCE IN CERTAIN LOCAL AUTHORITY AREAS DURING THE YEAR ENDED 30TH JUNE, 1926 (ARRANGED IN ORDER OF INCIDENCE RATE).

Place.	Notifications.			Incidence per 1,000 of Population.		
	European.	Non-European.	Total.	European.	Non-European.	All Races.
Clanwilliam.....M.	47	1	48	126·00	1·47	45·67
Steytlerville.....M.	16	11	27	22·70	17·00	20·43
Senekal.....M.	22	15	37	18·36	12·07	15·16
Riebeeck Kasteel.....V.M.B.	5	4	9	11·76	23·53	15·12
Korsten.....V.M.B.	41	65	106	57·99	10·00	14·75
Somerset West.....M.	15	27	42	10·00	18·33	14·10
Vrede.....M.	13	24	37	9·12	14·52	12·00
Tarkastad.....M.	8	15	23	8·44	12·00	10·50
Uitenhage.....M.	26	111	137	3·31	17·34	9·70
Aberdeen.....M.	21	4	25	11·84	4·28	9·23
Victoria West.....M.	11	6	17	10·82	6·40	8·56
Pietersburg.....M.	21	4	25	10·57	3·00	7·54
Estcourt.....M.	10	3	13	13·40	3·00	7·43
Volksrust.....M.	17	7	24	7·66	6·36	7·20
Wellington.....M.	16	19	35	6·00	7·59	6·77
Burghersdorp.....M.	12	11	23	7·16	6·35	6·75
Oudtshoorn.....M.	25	46	71	4·50	8·90	6·63
Moorreesburg.....M.	8	1	9	8·55	2·27	6·53
Springs.....M.	8	101	109	1·80	6·70	5·60
Heidelberg (Cape).....M.	6	4	10	6·47	3·67	5·00
Newcastle.....M.	12	9	21	5·80	4·00	4·93
Bethlehem.....M.	10	19	29	3·00	6·37	4·55
Standerton.....M.	17	1	18	8·09	0·50	4·50
Vryheid.....M.	18	0	18	8·73	0·00	4·50
Germiston.....M.	77	112	189	4·90	4·20	4·46
Potchefstroom.....M.	43	8	51	5·25	1·54	3·74
Cradoek.....M.	17	7	24	5·19	2·00	3·53
Lichtenburg.....V.C.	9	0	9	4·81	0·00	3·44
Paarl.....M.	23	14	37	4·00	2·10	3·00
Christiana.....V.C.	7	1	8	3·52	1·23	2·85
George.....M.	9	4	13	3·07	2·13	2·70
Malmesbury.....M.	5	6	11	2·22	3·28	2·70
*Pretoria.....M.	105	55	160	2·48	2·16	2·34
Stellenbosch.....M.	5	12	17	1·35	3·32	2·32
*Port Elizabeth.....M.	52	42	94	1·79	3·26	2·24
Ermelo.....M.	10	0	10	3·68	0·00	2·20
*Kimberley.....B. of H.	6	76	82	0·37	3·56	2·20
Dundee.....M.	8	0	8	5·00	0·00	2·11
Boksburg.....M.	26	87	113	2·09	3·40	2·00
Jagersfontein.....M.	6	2	8	3·47	1·00	2·00
Mossel Bay.....M.	9	1	10	3·41	0·32	2·00
Cambridge.....M.	8	1	9	2·33	0·69	1·84
Krugersdorp.....M.	46	28	74	3·42	0·96	1·74
Worcester.....M.	9	6	15	2·31	1·26	1·73
Ladysmith (Natal).....M.	8	3	11	2·48	0·84	1·62
Roodepoort.....M.	7	27	34	1·00	1·60	1·40
Benoni.....M.	13	49	62	0·90	1·50	1·30
*Cape Town.....M.	142	137	279	1·17	1·68	1·30
Wynberg.....M.	14	13	27	1·40	1·09	1·23
*Bloemfontein.....M.	34	12	46	1·82	0·64	1·21
*Durban.....M.	51	69	120	0·96	1·43	1·18
*Johannesburg.....M.	189	167	356	1·12	1·25	1·11
Innesdale.....V.C.	12	0	12	1·50	0·00	1·00
Brakpan.....M.	4	12	16	1·30	0·70	0·80
*East London.....M.	9	14	23	0·49	1·09	0·74
*Pietermaritzburg.....M.	20	7	27	1·00	0·40	0·70

B. of H. = Board of Health.

M. = Municipality.

V.C. = Village Council.

V.M.B. = Village Management Board.

\* Rates calculated as at census, May, 1926, in respect of European population; others calculated on population as at census, May, 1921.

4. *Influenza*.—In February, 1926, an outbreak of fairly severe type occurred amongst native prisoners in the Durban gaol. About 55 cases occurred, with 5 deaths from pneumonic complications.

Outbreaks or prevalences of the disease, mostly of mild type and of the nature of infectious catarrh, and with few severe or complicated cases, occurred in most centres in the Union during the year.

5. *Leprosy*.—As stated in previous annual reports, this Department undertook, as from 1st January, 1923, the organization of a Leprosy Board to examine periodically all patients segregated in institutions, with a view to the discharge of “arrested” and non-infective cases, and on 1st April, 1924, took over from the Department of the Interior the administration of all leper institutions and leprosy matters. A summary of policy and proposals in regard to leprosy was given in the report for the year ended 30th June, 1924.

(a) *Present Position of Leprosy in the Union*.—One of the proposals was to carry out a careful and systematic “leprosy survey” of the Union, with a view to ascertaining the position as accurately as possible, especially as regards the number of undiscovered lepers at large at the time when the Department assumed administrative responsibility. Owing to shortage of staff and other circumstances, it proved impossible to carry out a survey as originally proposed, but during 1924 all magistrates and district surgeons were circularized and requested to inquire carefully into the matter, under heads specified in the circular, in their respective districts, and to report the results. These reports and the figures and estimates furnished were carefully scrutinized, abstracted, and tabulated, district by district, by the Department and summaries prepared; also a map of the Union showing the incidence of leprosy per 1,000 of the population in each district during the fifteen-year period ended June, 1924. Unfortunately the records in some districts were incomplete, but it was possible, by estimation from the recorded figures, to fill in the gaps and compile substantially accurate tables.

The following tables show the lepers discovered and certified during the fifteen-year period mentioned, the known cases remaining in their homes, and the estimated numbers remaining at large, unknown and uncertified, at the end of that period:—

TABLE J.—(i) LEPROSY : CASES DISCOVERED AND CERTIFIED DURING THE FIFTEEN-YEAR PERIOD ENDED JUNE, 1924.

Province.	European.		Native.		Coloured.		Asiatic.		Race and Sex Not Recorded.	Magistrates' Totals (not complete in all cases for full fifteen years).	Estimated Numbers to be added in respect of Periods and Districts for which recorded figures are incomplete.	Total Numbers for Fifteen-year Period.
	M.	F.	M.	F.	M.	F.	M.	F.				
Cape (Province proper).....	45	26	309	206	297	195	—	—	19	1,097	107	1,204
Transkei.....	1	—	694	492	18	11	—	—	33	1,249	337	1,586
Transvaal....	52	38	1,000	349	79	24	—	—	174	1,710	639	2,355
Natal.....	2	1	431	253	1	1	29	4	22	744	427	1,171
Orange Free State.....	19	4	198	126	4	2	—	—	3	356	120	476
UNION..	119	69	2,632	1,426	399	233	29	4	251	5,162	1,630	6,792

TABLE J.—(ii) LEPROSY : CASES REMAINING IN THEIR OWN HOMES, JUNE, 1924.

Province.	Certified and Awaiting Removal.	Home Segregated.	Probationally Discharged from Leper Institutions.	Total.
Cape (Province proper).....	9	8	245	262
Transkei.....	61	8	260	329
Transvaal.....	7	4	217	228
Natal.....	20	2	149	171
Orange Free State.....	3	2	34	39
UNION.....	100	24	905	1,029

TABLE J.—(iii) LEPROSY : ESTIMATED NUMBERS OF CASES AT LARGE, UNDISCOVERED AND UNCERTIFIED, JUNE, 1924.

Province.	Magistrates' Estimates.				Estimated Numbers Based on Average Number Discovered Annually and Average Period between Onset and Discovery.
	Number of Districts Reported Free from Leprosy.	Districts Doubtfully Free from Leprosy.	Districts Where No Information Given.	Estimated Number of Lepers at Large and Uncertified.	
Cape (Province proper).....	8	5	3	39	385
Transkei.....	5	4	—	583	557
Transvaal.....	16	2	4	393	754
Natal.....	18	2	1	350	393
Orange Free State.....	24	1	2	32	151
UNION.....	71	14	10	1,397	2,240

There is reason to believe that the magistrates' estimates given in the foregoing table are in many instances on the low side ; they probably do not take sufficient account of cases in the early stages and still without disfigurement or obvious symptoms. During the fifteen years ended June, 1924, the average number of new cases coming to light annually was approximately 450 (there were also some which never came to light), and the average period which elapsed between onset and segregation was about six and a half years. Efforts are

being made to reduce this period, but it is still at least five years. If we assume that the number of new cases developing annually remains much the same, namely, about 450 (and this seems a reasonable estimate), then this figure multiplied by 5 would give an idea of the number of cases in various stages at present at large and undiscovered; the figures so arrived at are shown in the last column of Table J (iii). It would be safe to say that in the Union in 1924 there were, in round figures, about 2,000 lepers at large, unknown and undiscovered, in various stages of the disease, many of them in the early stages.

Taking this figure of 2,000 for unknown and undiscovered cases, the general position of the Union as regards leprosy in 1924 may be set out as follows:—

Certified lepers in institutions.....	2,141
Certified lepers, home-segregated.....	24
Certified lepers awaiting removal.....	100
Probationally discharged lepers.....	905
Unknown and uncertified lepers (estimated)..	2,000

TOTAL NUMBER OF LEPERS IN THE UNION.. 5,170

The total population of the Union in 1924 was 7,293,927 persons; the leprosy rate therefore works out at 0.07 per 1,000, or 70 per 100,000 of the total population.

The circular issued by the Department in 1924 also requested each magistrate to inquire and report as to whether there were any special foci or centres of special prevalence of leprosy in his district, and whether prevalence was increasing, decreasing, or stationary. The following table summarizes the replies:—

TABLE J.—(iv) LEPROSY : SUMMARY OF REPORTS OF MAGISTRATES AS TO FOCI OR SPECIAL CENTRES OF LEPROSY, AND WHETHER PREVALENCE INCREASING OR DECREASING.

Province.	Districts in which Foci Reported and Number of such Foci.	Districts in which No Foci Reported.	Districts in which No Information as to Foci Available.	Districts in which Prevalence Increasing.	Districts in which Prevalence Decreasing.	Districts in which Prevalence Stationary.	Districts with regard to which Magistrates unable to Express Opinion as to Prevalence.
Cape (Province proper).....	9 in 5	84	7	1	15	12	56
Transkei.....	16 in 7	21	1	5	4	12	9
Transvaal.....	8 in 5	30	2	2	5	9	22
Natal.....	22 in 13	23	5	2	7	11	21
Orange Free State	2 in 2	28	3	2	5	7	19
UNION.....	57 in 32	186	18	12	36	51	127

The districts in which the disease was reported to be increasing are Tulbagh, Butterworth, Lusikisiki, Nqamakwe, Matatiele, Umtata; Ixopo, New Hanover; Ladybrand, Vrede; Heidelberg and Middelburg (Transvaal).

The following table indicates the prevalence and trend of the disease in specified areas of the Union during the past sixteen years, it being assumed that the degree of activity in discovering and removing cases has remained fairly constant during the period:—

TABLE J.—(V) CERTIFIED CASES OF LEPROSY (EXCLUDING TRANSFERS AND READMISSIONS) REMOVED TO LEPER INSTITUTIONS DURING THE SIXTEEN-YEAR PERIOD, 1910 TO 1925 INCLUSIVE.

Area.	Race.	1910.		1911.		1912.		1913.		1914.		1915.		1916.		1917.		1918.		1919.		1920.		1921.		1922.		1923.		1924.		1925.		Total.		Grand Total.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
Cape.....	E.....	2	1	5	1	7	1	1	1	3	2	1	6	2	2	3	1	3	2	7	2	2	2	2	2	3	1	1	1	1	1	1	43	25	68		
	C.....	14	13	12	10	12	8	12	7	15	7	6	17	5	6	4	3	6	3	8	7	6	4	12	3	4	9	7	8	2	2	172	97	269			
	N.....	2	—	1	—	—	—	2	—	—	—	—	1	—	—	—	—	—	3	—	3	—	—	—	—	—	—	—	—	—	28	3	31				
	A.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1			
	TOTAL...	18	14	18	11	19	9	15	8	18	9	8	24	7	9	6	9	22	9	6	18	9	9	6	17	7	12	5	8	9	4	2	244	125	369		
	COMBINED TOTALS.	32	29	28	23	27	31	15	27	15	24	15	31	17	19	17	108	94	134	156	6	369	—	—	—	—	—	—	—	—	—	—	—	—			
Transkei...	E.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	C.....	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	
	N.....	41	48	25	17	79	77	27	29	32	25	28	12	99	74	54	9	65	30	26	19	34	37	33	34	51	56	43	70	64	94	61	809	635	1,444		
	A.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	TOTAL...	42	48	26	17	79	77	27	29	32	25	28	12	100	74	54	9	65	30	26	19	34	37	33	34	52	56	43	70	64	95	61	814	635	1,449		
	COMBINED TOTALS.	90	43	156	56	57	63	95	45	71	67	108	174	174	174	63	95	45	45	45	71	67	108	134	156	156	134	156	156	1,449	1,449	—	—				
Ciskei.....	E.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	C.....	—	—	3	2	3	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	N.....	15	22	15	20	16	15	12	14	8	3	25	6	20	5	18	14	6	11	10	15	15	32	8	6	26	16	18	6	8	28	12	263	210	473		
	A.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	TOTAL...	15	22	18	22	19	16	14	14	8	3	25	6	20	5	18	15	6	11	10	15	15	32	9	8	26	16	18	6	8	29	12	273	216	489		
	COMBINED TOTALS.	37	40	35	28	11	33	17	25	57	40	40	25	25	33	63	95	45	45	45	71	67	108	134	156	156	134	156	156	1,449	1,449	—	—	—			
Other Districts, Cape Province	E.....	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	C.....	8	5	11	4	8	5	7	2	6	—	2	5	4	1	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	N.....	20	13	14	6	9	8	6	3	12	4	16	1	9	5	21	12	15	2	11	4	2	5	8	9	7	8	9	6	1	9	6	174	94	268		
	A.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	TOTAL...	30	20	28	10	17	14	16	6	19	5	18	1	17	11	24	15	19	2	11	4	5	6	10	10	12	12	15	8	9	4	10	6	260	134	394	
	COMBINED TOTALS.	50	38	31	22	24	39	21	15	11	20	24	28	28	39	63	95	45	45	45	71	67	108	134	156	156	134	156	156	1,449	1,449	—	—	—			

Cape Area.—Bredasdorp, Caledon, Calitzdorp, Ceres, Clanwilliam, George, Hopefield, Knysna, Ladismith, Malmesbury, Montagu, Mossel Bay, Oudtshoorn, Paarl, Piquetberg, Port Nolloth, Riversdale, Robertson, Simonstown, Somerset West, Stellenbosch, Swellendam, Tulbagh, Van Rhynsdorp, Wellington, Wynberg, Worcester.  
 Ciskei.—Cathcart, East London, Fort Beaufort, Glen Grey (Lady Frere), Keiskama Hoek, Kingwilliamstown, Komgha, Peddie, Queenstown, Stockenström, Stutterheim, Victoria East.

Area.	Race.	1910.		1911.		1912.		1913.		1914.		1915.		1916.		1917.		1918.		1919.		1920.		1921.		1922.		1923.		1924.		1925.		Total.		Grand Total.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
Transvaal.	E.....	6	3	7	4	4	2	6	4	8	3	9	5	4	4	6	1	3	3	4	5	3	4	4	6	7	3	9	4	7	2	7	3	99	55	154	
	C.....	1	—	—	—	—	—	—	—	—	—	4	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26	
	N.....	192	63	132	40	167	74	139	19	119	32	168	67	108	36	130	36	130	50	93	21	35	108	44	132	69	97	50	94	47	89	30	1,961	713	2,674		
	A.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	
	TOTAL...	200	66	139	44	174	76	147	24	127	35	181	74	112	40	136	37	125	53	99	26	39	116	50	142	72	111	54	102	50	97	34	2,085	774	2,859		
COMBINED TOTALS.		266	—	183	—	250	—	171	—	162	—	255	—	152	—	173	—	178	—	125	—	116	—	166	—	214	—	165	—	152	—	131	—	2,859	—		
Orange Free State	E.....	—	—	—	—	2	1	1	1	2	—	2	—	3	—	1	—	—	—	2	1	3	—	—	2	—	—	—	—	—	—	—	—	—	—	29	
	C.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12	
	N.....	—	—	3	2	18	3	19	12	14	5	22	7	21	14	24	8	20	8	11	7	23	11	13	16	31	18	16	14	8	12	3	263	130	393		
	A.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	TOTAL...	—	—	3	3	20	4	23	13	16	5	24	7	25	14	25	8	20	10	14	9	26	12	16	17	33	11	19	18	15	8	13	3	292	142	434	
COMBINED TOTALS.		—	—	6	—	24	—	36	—	21	—	31	—	39	—	33	—	30	—	23	—	38	—	33	—	44	—	37	—	23	—	16	—	434	—		
Natal.....	E.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
	C.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	N.....	1	1	1	1	2	1	—	—	2	—	16	3	16	7	15	5	44	32	68	34	50	28	43	25	70	56	28	51	37	—	56	30	492	288	780	
	A.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9
	TOTAL...	1	1	1	1	3	1	—	—	2	—	16	4	16	7	15	6	44	33	69	35	51	28	45	25	71	57	28	51	38	58	30	501	294	795		
COMBINED TOTALS.		2	—	2	—	4	—	1	—	2	—	20	—	23	—	21	—	77	—	104	—	79	—	70	—	128	—	85	—	89	—	88	—	795	—		
Zululand..	E.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	C.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	N.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	A.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	TOTAL...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
COMBINED TOTALS.		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GRAND TOTALS.		306	171	233	108	331	197	243	94	222	82	313	113	316	162	294	99	288	146	262	123	236	153	256	158	352	233	288	180	266	182	309	148	4,515	2,349	6,864	
COMBINED GRAND TOTALS.		477	—	341	—	528	—	337	—	304	—	426	—	478	—	393	—	434	—	385	—	389	—	414	—	585	—	468	—	448	—	457	—	6,864	—		



Although European cases of leprosy of several years' duration are still discovered from time to time, available data indicate that the number of undiscovered European cases is not large, and that the incidence of the disease in Europeans, and probably also in mixed coloured, is decreasing. For the "Cape area," for instance [see Table J (v)], the total number of cases (excluding natives) removed to leper institutions during the sixteen-year period, 1910-25, was: European, 68; mixed coloured, 269; an approximate average of 4 European and 17 coloured; total, 21 cases annually. The numbers, however, dropped from an average of 27 per annum during the first four years of the period to 14 during the last four years, a decrease which points to diminished prevalence, as the efficiency of diagnosis and discovery has certainly not decreased during the period.

Reasonably complete and accurate knowledge of the position and trend of prevalence is indispensable to the effective handling of the leprosy problem; it is hoped that it will be possible in the near future to check and bring up to date the 1924 estimates and to ascertain the position more fully and accurately than has hitherto been possible.

(b) *Lepers Segregated in Institutions*.—A clinical and statistical study has been made of the patients remaining in the six leper institutions in June, 1924, the results of which are summarized in the following tables:—



TABLE K.—(ii) LEPROSY: PATIENTS IN INSTITUTIONS IN JUNE, 1924—AVERAGE DURATION (IN YEARS) OF DISEASE BEFORE SEGREGATION.

Institution.	European.			Native.			Coloured.			Asiatic.			All Races and Sexes.
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	
Robben Island.....	2.82	5.27	4.23	—	—	—	3.20	8.56	6.00	—	—	—	5.43
Pretoria.....	7.31	6.56	7.00	6.20	6.60	6.35	6.60	5.10	6.16	2.66	9.00	5.20	6.43
Amatikulu.....	—	—	—	8.30	7.60	7.99	—	—	—	—	13.00	13.00	8.00
Emlanyana.....	—	—	—	5.97	5.00	5.50	—	—	—	—	—	—	5.50
Mkambati.....	—	—	—	7.75	5.44	6.78	—	—	—	—	—	—	6.78
Bochem.....	—	—	—	6.86	12.35	9.00	—	—	—	—	—	—	9.00
AVERAGE.....	6.80	6.52	6.70	7.10	7.33	7.13	4.65	8.13	6.00	2.66	10.66	6.66	6.64



TABLE K.—(iv) LEPROSY : PATIENTS IN INSTITUTIONS IN JUNE, 1924—AVERAGE AGE ON SEGREGATION.

Institution.	European.			Native.			Coloured.			Asiatic.			All Races and Sexes.
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	
Robben Island.....	28.00	32.00	29.80	18.00	—	18.00	32.60	36.50	34.00	—	—	—	33.20
Pretoria.....	31.61	37.85	34.00	32.40	31.67	32.00	27.35	35.77	30.70	33.00	43.00	37.00	32.15
Amatikulu.....	—	—	—	32.50	32.51	32.51	—	—	—	—	48.00	48.00	32.64
Emjanyana.....	—	—	—	32.77	34.52	33.33	—	—	—	—	—	—	33.33
Mkambati.....	—	—	—	34.00	30.36	32.55	—	—	—	—	—	—	32.55
Bochem.....	—	—	—	30.78	34.00	32.00	—	—	—	—	—	—	32.00
AVERAGE.....	30.72	36.66	33.10	32.90	33.15	33.00	31.60	36.50	33.21	39.00	44.66	41.12	33.12

TABLE K.—(v) LEPROSY : PATIENTS IN INSTITUTIONS IN JUNE, 1924—AVERAGE NUMBER OF YEARS SINCE SEGREGATION.

Institution.	European.			Native.			Coloured.			Asiatic.			All Races and Sexes.
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	
Robben Island.....	11.20	9.30	10.30	1.00	—	1.00	8.73	8.14	8.52	—	—	—	8.86
Pretoria.....	6.16	6.60	6.32	4.21	5.00	4.53	4.10	1.80	3.47	2.00	4.50	3.00	4.72
Amatikulu.....	—	—	—	3.65	3.46	3.57	—	—	—	1.00	1.00	1.00	3.45
Emjanyana.....	—	—	—	4.56	4.57	4.56	—	—	—	—	—	—	4.56
Mkambati*.....	—	—	—	2.72	2.84	2.76	—	—	—	—	—	—	2.76
Bochem.....	—	—	—	3.85	7.85	5.30	—	—	—	—	—	—	5.30
AVERAGE.....	6.73	7.41	7.00	4.30	4.56	4.30	7.82	7.10	7.61	1.60	3.33	2.25	4.62

\* The Mkambati institution was opened for the reception of patients in 1922.



The foregoing tables bring out many points of great interest and importance in connexion with the disease in the Union, and its limitation and control. A few of these may be mentioned: the predominance of the anaesthetic type (nerve and skin leprosy) amongst native cases, and of the nodular and mixed types amongst European and coloured cases; the long average period—over six and a half years—between onset and segregation; the large proportion of cases in which a history of direct association with previous cases was elicited; the average age on first admission, thirty-three years; and the large percentage of cases in which skin symptoms were the first noticed. The proportion of cases giving a history of association with previous cases in the same family or otherwise is certainly much understated in the tables, as leper patients are notoriously apt to conceal facts of this kind. Associated cases and family groups are being further studied, and a number of family trees prepared, which should throw useful light on the modes of spread and conditions favouring spread. The results so far fully support the views of Sir Leonard Rogers and his co-workers, that in the great majority of cases infection takes place in childhood or early adult life, and that the association of infective lepers with children and young people is much more dangerous than their association with older people. Another question of great importance on which it is hoped useful light will be thrown is the degree of infectivity of pure anaesthetic cases in which it is impossible, or only exceptionally possible, to demonstrate the discharge of leprosy bacilli by bacteriological methods, and whether cases of this type, if infective at all, are sufficiently infective to justify institutional segregation. The vitally important point brought out by the tables is the long average period between the occurrence of the first symptom and segregation. According to the patients' accounts, this period has been on an average about six and a half years, and has in many cases been much longer—ten, twelve, or fifteen years, or even more. It is very probable that the period has usually been understated rather than overstated by the patients, and that the true average has hitherto been nearer eight years than six and a half. These early years of the disease are usually the most infective, and during this long period the cases of infective type have been freely associating with their families and others and disseminating the infection.

The lesson of all this is obvious. Until we can devise some system or method of securing *early discovery* and the early institution of precautions, we cannot hope effectively to limit spread. I am satisfied we shall never achieve this by methods of compulsion; we must secure the voluntary co-operation of the native peoples. More attention should also be devoted to close contacts of cases than has hitherto been done; if we could keep in touch with all such contacts and medically examine them every six months or so for a period of five or six years after removal of the original case from the household, spread of leprosy in the Union would very soon be checked and reduced.

(c) *Discharge of Arrested and Non-Infective Cases.*—In considering the foregoing tables, it should be remembered that the system of examining periodically by a special board all inmates of institutions, and discharging, under supervision and subject to periodical medical examination, all cases considered to be *arrested* and no longer infective, had been in operation during the eighteen months prior to the compilation of the data, otherwise the average age of patients and average stay in the institution would have been considerably greater.

The following table shows the numbers of patients probationally discharged from leper institutions on the recommendation of the Leprosy Board, the numbers classified by the Board as arrested and non-infective, but who were allowed to remain in the institution, and the numbers of probationally discharged patients readmitted to institution as recrudescant. With regard to the seventeen cases in the last-mentioned category, it may be mentioned that the majority showed merely breaking-down of old ulcers or other lesions of a trophic nature, without actual recurrence of activity of the disease or infectivity.

TABLE L.—(i) LEPROSY: PATIENTS PROBABLY DISCHARGED FROM INSTITUTIONS OR CLASSIFIED AS “ARRESTED AND NON-INFECTIVE,” AND NUMBER OF SUCH PATIENTS SINCE READMITTED AS RECRUDESCENT.

Year.	Probationally Discharged from Institution (and actually left).				Classified as “Arrested and Non-Infective” for whom suitable accommodation could not be obtained or who for other reasons were allowed to remain at Institution.				Probationally Discharged Patients who have been Readmitted to Institutions.						
	European.	Coloured.	Native.	Asiatic.	Total.	European.	Coloured.	Native.	Asiatic.	Total.	European.	Coloured.	Native.	Asiatic.	Total.
1923.....	11	23	468	1	503	3	—	40	—	43	—	—	8	—	8
1924.....	6	29	217	2	254	1	—	10	—	11	—	—	2	—	2
1925.....	6	5	94	—	105	—	—	10	—	10	—	—	2	—	2
1926.....	3	5	62	—	70	1	1	28	—	30	—	—	4	—	5
TOTAL..	26	62	841	3	932	5	1	88	—	94	—	—	16	—	17

(d) Working of Leper Institutions.—The following tables give the salient figures as to the working of the institutions during the year, and the numbers remaining therein at the end of the year:—

TABLE L.—(ii) LEPER INSTITUTIONS: ADMISSIONS DURING THE YEAR ENDED 30TH JUNE, 1926.

Institution.	First Admissions.						Readmissions.						Transfers from Other Institutions.						Total.	
	E.		N.		C.		A.		E.		N.		C.		A.		M.	F.		Per-sons.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
Robben Island.....	—	—	1	1	2	1	—	—	—	—	—	—	—	—	—	—	5	2	7	
Pretoria.....	7	4	97	49	5	3	—	—	—	—	—	—	—	—	—	—	148	66	214	
Mkambati.....	—	—	37	15	—	—	—	—	—	—	—	—	—	—	—	—	53	21	74	
Emjanyana.....	—	—	88	57	—	—	—	—	—	—	—	—	—	—	—	—	112	60	172	
Amatikulu.....	—	—	59	38	—	—	—	—	—	—	—	—	—	—	—	—	68	41	109	
Rochem.....	—	—	11	5	—	—	—	—	—	—	—	—	—	—	—	—	12	5	17	
TOTAL.....	7	4	293	165	7	4	7	47	17	3	33	2	—	—	—	398	195	593		





TABLE L.—(V) LEPER INSTITUTIONS : PATIENTS THEREIN ON 30TH JUNE, 1926.

Institution.	European.		Native.		Coloured.		Asiatic.		Total.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Robben Island.....	10	7	27	8	35	31	—	—	72	46	118*
Pretoria.....	60	33	445	305	27	15	2	—	534	353	887
Mkambati.....	—	—	126	91	—	—	—	—	126	91	217
Emjanyana.....	—	—	330	238	—	—	—	—	330	238	568
Amatikulu.....	—	—	232	169	—	—	2	1	234	170	404
Bochem.....	—	—	48	29	—	—	—	—	48	29	77
TOTAL.....	70	40	1,208	840	62	46	4	1	1,344	927	2,271

\* Including twenty leper patients (all coloured or native) also with mental disease or defect.

(e) *Pretoria Leper Institution: Commission of Inquiry.*—Following upon a disturbance amongst the native patients on Christmas Day, 1925, and certain complaints against the management, a Commission was appointed by His Excellency the Governor-General in February, 1926, to inquire into and report upon—

- (i) the recent manifestations of unrest or dissatisfaction amongst certain sections of the patients in the Pretoria Leper Institution, and the causes thereof;
- (ii) the accommodation and arrangements at, and the general administration and management of, the said institution—including the care, medical attendance, and general welfare of the patients therein, and the arrangements and facilities in connexion with the patients' relatives and friends visiting the institution;

and to submit recommendations thereon. The Commission consisted of Mr. J. Young, Chief Magistrate, Johannesburg, with Dr. A. J. Stals, M.L.A., and Mr. I. W. de Jager, Inspector of Natives, as assessors. The Commission, after careful and thorough investigation, submitted its report on 30th April, 1926; it fully exonerated the Physician-Superintendent from the charges of harsh or unsympathetic treatment which had been made against him, and, indeed, considered that in certain instances he had been inclined to err on the side of leniency. It attributed the troubles with the native patients mainly to the presence of a number of Xosas who had been transferred from Emjanyana to the institution for disciplinary reasons, and the dissatisfaction amongst the European patients to a desire for return to the lax conditions and freedom from all restrictions which had obtained under a previous superintendent, and which, in 1917, were the subject of an inquiry by the Public Service Commission and a report by Mr. Justice Gregorowski, resulting in the thorough reorganization of the administration of the institution and the enforcement since of proper and necessary discipline. The Commission went fully into the present system of administration and management of the institution, and submitted a number of useful recommendations calculated to promote smooth and efficient working. Steps are being taken to give effect, as far as possible, to these recommendations, but some of them cannot be carried out pending new legislation.

(f) *Leprosy Advisory Committee.*—This Committee did not meet during the year, but its members were consulted, by circular, with regard to certain matters, especially the question of the evacuation of the Robben Island institution and the removal of the remaining patients to Pretoria. It transpired that, prior to the transfer of leprosy matters to this Department, the Minister of Interior gave these patients an undertaking that they would not be transferred to a distant institution against their will. The patients violently opposed the suggested transfer, and efforts to secure their concurrence—including the sending of a deputation to Pretoria—only served to increase their opposition. Under the circumstances, and despite the heavy additional expense involved, the Government has decided to continue the Robben Island institution for the present. All Cape Province European cases and mixed coloured cases in other institutions are now being transferred there, and, in future, all cases from the "Cape area" other than natives will be sent to Robben Island.

(g) *General Remarks.*—The Leprosy Board system and the general scheme of policy and procedure set out in the 1924 report are working admirably. Only active and actually or presumably infective cases are now segregated in institutions; the accommodation in the six institutions is now ample; the

removal of fresh cases is being speeded up, and the average intervals between onset and segregation and between certification and removal reduced. Annual expenditure on leprosy has been considerably reduced. Practically all patients in institutions are now receiving active anti-leprotic treatment by various modern methods; preparations of chaulmoogra oil and its derivatives are being used with encouraging results, especially in early cases; patients are much more hopeful and willing to submit to and persist in special treatment; and the increasing number of voluntary notifications and admissions shows that the confidence and co-operation of the native peoples are being gradually won. But much remains to be done before the Department can fairly claim to be definitely on the road to effective control and ultimate eradication of the disease. There must be more publicity and educative work amongst the classes of the population chiefly affected, with regard to the nature of the disease, its modes of spread, conditions favouring spread, and the great importance of *early* recognition and treatment; more research work and investigation as regards the causation of the disease and methods of treatment; improved means of securing early discovery and notification; and a more efficient system of keeping in touch with and periodically examining members of families or households in which cases have occurred, and other close contacts of leper patients. Progress in these directions is certainly being made, but owing to insufficient staff and the limited resources of the Department, it is slower than could be wished. A medical officer with knowledge of natives and special training and abilities in connexion with leprosy research and investigation—one who could be set apart for this work, to investigate the “field” position, both in its epidemiological and administrative aspects, and to direct, supervise, and co-ordinate test treatments and other investigations at the various leper institutions—is greatly needed, but there is difficulty in finding an officer with the necessary training, experience, and special capacities. It is hoped, however, to make such an appointment in the near future.

6. *Malaria*.—No general prevalence occurred throughout the endemic areas, but there was serious localized prevalence in Zululand from the Umfolosi River northwards, and in the Waterberg district of the Transvaal.

*Zululand*.—European settlements, particularly at Mkuzi and Hluhluwe, were affected, and several cases of blackwater fever occurred. Europeans and natives working on the Matubatuba–Pongola railway construction also suffered. Natives recruited from malarious areas appeared to have some degree of immunity as compared with those from malaria-free areas. The rationing, housing, and mosquito protection of native labourers employed in railway construction and on sugar and cotton estates in Zululand on the lines advocated by the Assistant Health Officer stationed in Natal are being more widely adopted.

Considerable anti-mosquito work is being done by the Railway Administration along the line from Durban to railhead at Pongola. Similar work on sugar and cotton estates is reported as irregular and spasmodic.

The wide powers under the malaria regulations of 1924 have not as yet been exercised against land-owners in Zululand.

*Waterberg District, Transvaal*.—During May and June considerable prevalence, mostly of the tertian type, occurred along the valleys of the Zand, Crocodile, and Matlabas Rivers, as well as in the “pan veld.” There were late rains in May, and huge swarms of mosquitoes were reported in these areas. A special tour of 1,100 miles was made by the district surgeon, who treated 495 Europeans and 212 natives, distributed large quantities of quinine and tonic medicines, and advised settlers as to anti-mosquito measures.

The South African Red Cross Society organized and undertook two special tours in the eastern and northern areas of the Transvaal, during which lectures were given and large quantities of anti-malaria literature distributed. Jointly with the Red Cross Society, an up-to-date pamphlet by Drs. Park Ross and Hay has been prepared by this Department, and will be made use of in schools in malarious areas and otherwise distributed widely. At the request of the Transvaal Education Department, a malaria catechism has been prepared for use in schools and will shortly be distributed.

The malaria regulations of 1924 were applied to the irrigable area below the Hartebeestpoort Dam in respect of private owners of land. Some 300 warning notices were issued, requiring the clearing of vegetation from furrows, drainage of standing pools, etc., to the satisfaction of the Administration Engineer. Objections immediately arose and indignation meetings were held with a view to having the notices withdrawn. A committee, which included the parliamentary representative of the district, was appointed by the Minister to investigate the alleged hardships and to advise generally. The result was that supplementary and explanatory circulars were issued by the Department, and local advisory committees were formed to facilitate the carrying out of the measures ordered.

The Government departments specially concerned in the development and settlement of the irrigable area, which is roughly 40 by 15 miles and in which upwards of 10,000 European persons have been placed by Government, are Lands, Labour, Irrigation, and Health. A large proportion of the land is owned by the Government, and as a result of many inter-departmental conferences as to which departments should bear the cost of anti-mosquito measures, not only on Government land, but also as regards public streams and furrows on private property, it was finally decided that the Irrigation Department should take control and proceed with the work. The estimated expenditure for initial work in removing rock bars, canalizing, clearing vegetation, etc., was £6,000, and for annual maintenance £2,000. Satisfactory progress has been made.

A survey of the Union in respect of anophelines and blood-sucking flies is under consideration. Apart from some research work by officers of the late Natal Government in 1905, when *A. costalis* was proved to be the main vector of a serious epidemic, and some incidental work during the intervening years, little progress in this direction has been made. It is proposed that the survey should be jointly undertaken by the Division of Veterinary Research and the Institute for Medical Research, the Department of Public Health co-operating. A certain amount of work was done by the Institute and this Department during the year. Six species of anophelines have been identified as occurring in the Hartebeestpoort irrigable area from January to March, namely: *A. pretoriensis*, *A. maculipalpis*, *A. rufipes*, *A. squamosus*, *A. mauritanus*, *A. marshalli*. In the northern Transvaal in March and April, *A. costalis* was found in streams, and also in native houses at Vetfontein. *A. transvaalensis* and *A. mauritanus* were found in April at Matamba. In February, *A. funestus* was found in the Letaba River and also in native huts near by. In May and June at Elim, *A. maculipalpis*, *A. transvaalensis*, *A. funestus*, and *A. natalensis* were found.

These discoveries of *A. funestus* are of special importance, as from what is known of its habits and activities in Central Africa and elsewhere, it may play an important rôle in certain localities in the "carry over" of infection from one malaria season to the next. Without further information with regard to the malaria-carrying mosquitoes of the Union and their breeding

and biting habits and bionomics, it is impossible to handle the malaria problem effectively or to feel on really sound ground in advising special measures or expenditure in regard to it. It is hoped that the survey will be organized and proceeded with during the coming summer.

A very important International Malaria Congress was held in Rome in October, 1925, at which the subject, including the work of the Malaria Commission of the League of Nations, was discussed. The following points of practical importance emerge from the proceedings and the Malaria Commission's report: *Malaria infection usually takes place in dwellings*; risk of being bitten by infected mosquitoes in the open air is almost negligible. Many species of malaria-carrying mosquitoes are essentially indoor insects. Killing of mosquitoes in dwellings, periodical house fumigation, and the construction, lighting, and furnishing of dwellings so as to exclude mosquitoes and avoid their harbourage by eliminating cover are of the greatest importance. In malarious countries the wiser policy in the long run is to proceed steadily with the creation and development of efficient medical and public health services, rather than to concentrate and spend a great deal of time and money in the beginning on direct measures for the destruction of mosquito larvae. The first and indispensable measure is to ensure prompt and effective treatment of malaria cases and carriers. The prophylactic use of quinine is advantageous for preventing attack and so enabling people to keep at their work. People in malarious areas should be taught that the *main danger of catching malaria is in the house itself*, not in the open air, and that (in addition to keeping the immediate vicinity clear of bush, vegetation, and collections of stagnant water), they should systematically catch and kill blood-fed malaria-carrying mosquitoes in their houses and endeavour, by cleaning, whitewashing, and other practicable means, to prevent their houses from becoming permanent sheltering places for these insects.

7. *Plague.*—(a) *Plague in Rodents.*—The Department's survey of the Union in regard to plague rodents, which was begun in 1922, was continued, and the position as at August, 1926, is shown in the attached map.

The new areas surveyed include the greater part of Natal, a portion of the eastern Transvaal, and the remaining unsurveyed portion of the Western Cape Province. In Natal, healthy gerbille areas were found in all the northern districts roughly as far south as a line drawn from Louwsburg to Estcourt. South of this line the soil appears to be unsuitable for gerbille habitation. In the north-western and western Cape the survey revealed an extensive area of sandy country heavily populated by gerbilles, hares and other veld rodents. This area included that portion of Kenhardt, Prieska, and Carnarvon districts in which enzootic plague was severe in 1923–24. During the resurvey of this portion in December, 1925, no evidence of rodent plague was found, but on the contrary a considerable increase of the rodent population had occurred. Many farmers in that area stated that these rodents were far more numerous than they had been for many years previously. It is probable that this increase is partly due to destruction of the natural enemies of rodents, such as jackals, wild cats, owls, and hawks.

During the autumn of 1926 rodent plague infection, which apparently had been dormant in the area above-mentioned for about three years, suddenly commenced to spread and in a few months reached the boundary between the districts of Van Rhynsdorp and Calvinia on the west, and extended southwards to a line between Nieuwoudtville, Calvinia town, and Williston, and northwards to Pella and the Orange River. Many farmers in the Kenhardt, Williston, and Calvinia districts reported a heavy mortality amongst hares and

smaller rodents. The rapidity, virulence, and extent of this wave of infection threaten not only the neighbouring districts of Clanwilliam and Van Rhynsdorp, but also those further south as far as the Cape Peninsula, all of which are in parts heavily infested with gerbilles and other rodents.

At the beginning of 1926 a plague epizootic was also noted in the districts of Cradock and Middelburg (Cape) which resulted in a number of plague cases amongst persons in those areas.

A limited extension of rodent plague infection which had spread westwards from the district of Standerton along the north bank of the Vaal River was also recorded in the district of Heidelberg, Transvaal. There was danger that it might spread to the districts of Bethal, Middelburg, and Pretoria.

It is very difficult to account for the factors that govern the periods of dormancy and recrudescence of plague infection amongst veld rodents. Rain-fall influences not only the temperature and relative humidity of the atmosphere (and therefore flea reproduction), but also the vegetation on which rodents depend for food supply. If the theory recently enunciated by C. S. Elton, of the University Museum, Oxford, England, as to the regulation of numbers amongst wild rodents be correct, and found to apply to South African conditions, then we may anticipate a fresh epizootic every three or four years, and more severe outbreaks every ten or eleven years. His theory is that wild rodents increase in numbers over several years and up to a point at which an epizootic of some sort occurs, which kills off a large proportion of the population. Increase then takes place and is followed by another epizootic, and so on indefinitely. These periodic fluctuations are probably controlled by widespread climatic fluctuations, the best evidence for this being that in certain cases the former run synchronously in widely separated countries. There appears to be a dominant short period of fluctuation in numbers of three to four years and a large movement of a period of from ten to eleven years. The fact that the eleven-year sunspot cycle roughly corresponds with the larger movement is significant.

Available data do not enable one to determine whether these periodic fluctuations of three to four and ten to eleven years, which Elton has found to occur in the Northern Hemisphere, also apply to South African conditions. As far as one can judge at present, these fluctuations do not occur in large movements in the whole Union at the same time, but smaller movements seem to take place in some part of the country each year. This is shown by the occurrence of smaller or larger human outbreaks, associated with rodent plague mortality, every summer since 1914 in different parts of the Union; while, on the one hand, human outbreaks in the eastern districts of the Cape Province have been noted during the years 1914, 1917, 1922, and 1925, roughly a three-year cycle; on the other hand, Hoopstad district has had human outbreaks in the years 1916, 1917, 1918, 1920, 1921, 1923, 1924, 1925, and 1926, with associated rodent plague mortality each year. So far as is known, there had been no previous plague epizootic in the north-western Cape, north-eastern Free State, or Standerton and Heidelberg districts of the Transvaal.

Our present knowledge of epizootic plague is still too incomplete to enable us to determine whether Elton's findings hold good in this country, and whether plague is the only infectious disease which kills off an over-abundant rodent population in any part; careful observations are, however, being made and data are being accumulated on this point.

As stated in the last report, every truck containing South African produce arriving at the Johannesburg goods station is examined for rodents by the rat-catching staff of the Johannesburg Health Department. During the past year 381 rodents were found in 330 trucks. All of these, except three house-mice, were ordinary domestic or black rats (*Rattus rattus*). The percentage of trucks in which rodents were found was 0·8. All rodents caught were examined at the South African Institute for Medical Research, no plague infection being found. The trucks most attractive to rats were those containing maize or other grain (54 per cent.), forage, lucerne, etc. (20 per cent.), and fruit or vegetables (18 per cent.).

During the previous year the "bag" of the Johannesburg rat-catching staff was 991, all of which were domestic rats, with a few house-mice, and one rodent thought to be a multimammate mouse, but not definitely identified. In August, 1925, two multimammate mice were found in a maize truck from the Free State at the Cape Town docks. No other instances where veld rodents have been found in railway trucks have so far been reported.

It is a fortunate circumstance that veld rodents are such shy animals and that they very seldom travel by rail; also that for a number of years past there has been no plague infection of domestic rats, which are great travellers. Veld rodents are, however, much more likely to be conveyed in bales of forage or lucerne than in maize bags; should infection spread to the veld rodents of areas where oats or lucerne are grown extensively, the risks of its conveyance in this way to the larger centres would be greatly increased.

Brown or dock rats (*Rattus norvegicus*) have been found living in gerbille burrows on the Cape Flats; under such circumstances plague infection, if introduced by one of these species, would quickly spread to the other.

(b) *Plague in Man*—(i) *Occurrences*.—In July, 1925, a small outbreak of five cases (three of them in one family), with two deaths, occurred in the coloured location of Boshof, Orange Free State. Infection was probably local, as it was found that Namaqua gerbilles were dying in the veld close to the location.

A single bubonic case in a coloured male was notified within the Kimberley municipal area in December last. Despite careful investigation, the source of this infection was not definitely ascertained. Vigorous anti-rodent measures were promptly taken by the Health Board and the city sanitary authorities, and no further case occurred.

At the beginning of 1926 an extensive and scattered epidemic occurred on fourteen different farms in the districts of Hoopstad and Winburg; thirty-seven cases (eight of which were cases of Europeans) were notified, with twenty-six deaths. The cases occurred from February to May, and this outbreak, as usual, synchronized with a similarly extensive epizootic among Namaqua gerbilles, multimammate mice, and hares. Five of the European patients belonged to one family, and their history is very typical of similar occurrences in previous outbreaks. At a farm in the Hoopstad district, many dead gerbilles were found and several natives became infected. Early in March the owner of the farm contracted bubonic plague. During his illness, which lasted for ten days, he was visited and attended to by his brother and his sister, visitors from Brandfort district. When he died the latter were notified by the district surgeon that they were under quarantine, and were not to leave the farm. Despite this instruction, they returned home the next day. Two days later the man contracted pneumonic plague. In spite of precautions, his mother and two sisters became infected through nursing and kissing him during his illness, and all died within a week of pneumonic plague.



The Cradock and Middelburg (Cape) outbreak resulted in twelve persons becoming infected, with nine deaths. Four of the cases were in Europeans, all belonging to one family, and their history is suggestive. At the farm Sakfontein, in Middelburg district, the son of the farmer was fond of hunting hares and other small animals with a dog. Dead hares and field mice were observed in the veld shortly before he became ill. It is reported that on returning home one day he remarked on the fleas he had picked up in the veld. A few days later he became very ill, developed a bubo below his shoulder-blade, and died on the sixth day. His father and mother are reported to have kissed him before his death; both developed pneumonic plague within a few days and died within a week thereafter. Their small daughter also developed pneumonic symptoms two days after the death of the mother and died in six days. Two coloured persons on the same farm had bubonic plague; one recovered.

One coloured patient developed bubonic plague in the Cradock municipal location and died; the local authorities took immediate and vigorous preventive and anti-rodent measures; no further case occurred. Investigation by a rodent officer of the Department showed that Namaqua gerbilles were dying close to the town and location; infection probably occurred locally.

The following table shows the cases and deaths discovered and reported during the past year:—

TABLE M.—PLAGUE CASES AND DEATHS IN THE UNION DURING THE YEAR ENDED 30TH JUNE, 1926.

Province.	Number of Outbreaks.	European.		Coloured or Native.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape.....	18	6	5	20	10	26	15
Natal.....	—	—	—	—	—	—	—
Transvaal.....	—	—	—	—	—	—	—
Orange Free State	17	9	9	36	22	45	31
UNION TOTAL...	35	15	14	56	32	71	46

(ii) *Type of Disease.*—86 per cent. of the cases were of the bubonic type, 10 per cent. pneumonic, and 4 per cent. mixed pneumonic and bubonic.

Except for five cases in the Boshof municipality, 1 in the Kimberley municipality, and 1 in the Cradock municipality, all the cases occurred in rural areas. Twenty farms had one case on each, 3 had two each, 4 had three each, 2 had four each, and 3 had six each.

(c) *Research Work.*—During the year the laboratory examination of many varieties of rodents suspected of being plague-infected showed for the first time that natural plague infection occurred also in the Namaqua gerbille. Although it has long been known that during plague epizootics this rodent succumbs along with others known to be susceptible, its natural infection had not previously been proved in the laboratory. It has been found to be relatively insusceptible to plague under experimental conditions.

Reports of the research bacteriologist and entomologist employed under the plague scheme organized by the South African Institute for Medical Research in conjunction with the Department and referred to in the last report prove beyond doubt that the disease which affects small veld rodents in South Africa

is identical with the disease known as "plague" in human beings; also that the strains of plague bacilli found in rodents and man in South Africa are identical with those found in other infected countries.

These officers further report the presence among gerbilles of another and different disease to which certain rodents smaller than the gerbille are also susceptible. This disease was first found in rodents from the Tiger River valley of the Bethlehem district, Orange Free State, and has been named "Tiger River disease." It has not been found possible to infect hares, ground squirrels, rats, guinea-pigs, rabbits, suricats, mongoose, cats, dogs, or monkeys with this disease. The disease is therefore very limited in its range, but for those species which it does attack it is almost as fatal as plague. The causative organism, a bacillus differing entirely from the plague bacillus, has been isolated. The post-mortem signs of the disease are ulceration of the intestine and necrosis of the liver and spleen, the development of multiple necrotic foci in the liver being the outstanding feature. Experimentally, susceptible animals can be infected with Tiger River disease either by subcutaneous inoculation or by feeding, and it is probable that in nature it is by feeding that the disease is spread. The cannibalistic tendencies of gerbilles would readily account for its spread amongst them. So far the disease in nature has been met with only amongst gerbilles. It can be spread experimentally amongst them both by laying down infected food and by letting loose infected animals. It may therefore be possible to use this disease for destroying gerbilles on the veld; its utility in this direction is being tested.

The entomological research work included a survey of the fleas infesting veld rodents, and showed that the three commonest of these fleas (*Xenopsylla eridos*, *Dinopsyllus lypusus*, and *Chiastopsylla rossi*) can convey plague from rodent to rodent, and that, when removed from their natural hosts, they will "bite" human beings. *X. eridos* is the most common flea found on wild rodents, and is probably the chief agent in spreading plague in the veld. It was also proved that fleas, kept apart from a host in a gerbille nest underground, may remain alive and infective for at least sixty days. In a series of experiments carried out by the Research entomologist it was found that, short of an orthodox fumigation in a closed chamber or box, there is no practicable method of destroying fleas amongst bags of maize by the use of sprays. In the absence of rodent hosts and of moisture, fleas in maize bags do not remain alive for more than a week or so, death being due to desiccation. This effect is greatly enhanced by exposure of the bags to sun and wind; to secure this efficiently, the stacks of bags should be turned at regular intervals, so that previously protected surfaces may in their turn become exposed. Local authorities and the Railway Administration have been duly circularized to this effect.

Interim reports by the Plague Research officers—Dr. J. Harvey Pirie, bacteriologist, and Dr. A. Ingram, entomologist—were printed and published by the Department in March, 1926 [No. 341 (Health)]; a comprehensive report of their investigations up to the end of June, 1926, is being printed and will be published by the South African Institute for Medical Research.

During the year, plague rodent infection was found in or close to large stacks of maize, much of it weevily or damaged, at Tiger River and Ventersburg Road Stations in the Orange Free State. After a good deal of negotiation and difficulty, the sound maize in the stacks was removed and dealt with in the nearest elevators; the weevily or damaged maize, after being disinfected and rebagged, was returned to the owners for local sale.

In consequence of the difficulties experienced in imposing restrictions on the movements of maize in the infected grain areas, a new regulation was promulgated (Government Notice No. 1028 of 18th August, 1926) authorizing the local authority or plague medical officer or magistrate to issue an order prohibiting or restricting the removal of grain or other produce either from or into any specified place or premises in which plague has occurred, or which is believed to be plague infected.

A rodent officer of this Department collaborated for some time with an official of the Railway Administration in determining the improvements necessary to render rodent-proof many of the goods sheds at railheads in the Orange Free State. These improvements are now being carried out by that Administration.

Local authorities throughout the Union are still being urged to exercise their powers under the rodent-proofing regulations (Government Notices Nos. 1214 and 1696 of 1924) so as permanently to exclude or "build-out" rodents from all shops and stores, and especially from all buildings or sheds containing maize, forage, or other "rat-attractive" produce, or from stacks or other collections of such produce. A revised illustrative diagram in this connexion has been issued by the Department.

As regards methods of destroying veld rodents, no new method superior to those previously devised and utilized by this Department has been found. An ingenious apparatus consisting of a large air-pump, similar to a motor-tyre pump, with a cylinder attached containing powdered pumice-stone or charcoal saturated with liquid hydrocyanic acid, through which the air passes on its way to the hose and nozzle, was designed by Mr. Larmuth, of the South African Industries and Explosives Company. When tested experimentally on rodents in artificial burrows, this apparatus gave promising results as regards efficiency, economy, and expedition, but proved to be disappointing and to have serious drawbacks when tried out on veld rodents under field conditions. The apparatus will, however, prove very useful for other disinfesting and de-ratting purposes. "Capex Vermin and Mole Destroyer" cartridges still remain the most efficient, most expeditious, and cheapest means of destroying rodents and their fleas within burrows in the veld. These cartridges have been improved during the year by the provision of a safety-match fuse, which greatly facilitates and expedites ignition.

8. *Rabies (Hydrophobia)*.—A death attributed to this disease was reported from Bloemfontein in November, 1925. The deceased, a European male adult, arrived in the town on 14th November from the farm Aurora (part of Ooktevrede), Bloemfontein district. He reported that he had been bitten by a dog on 11th October, and that the dog showed symptoms of rabies and was immediately destroyed. It was also reported that a second dog had been bitten by the first, had developed rabies, and had been destroyed; that two other dogs which had been in contact with the first two dogs had been destroyed, although showing no symptoms of the disease; and that one horse and three cows had been bitten by the first dog without showing any developments. The patient died on 16th November with symptoms very suggestive of hydrophobia; a post-mortem examination was performed, and materials were sent to the South African Institute for Medical Research, but were found on arrival to be too decomposed for examination.

A second suspected case occurred in June, 1926, on the farm Katdoornsplaats, in the Wolmaransstad district, the victim being a European lad of seven years. He was first seen by a medical man on 7th June, who gave the following history: The patient had been bitten by a red meerkat between the thumb and first finger of the right hand about six weeks previously. The

wound healed up without any local trouble, but on 5th June the boy became drowsy and the site of the bite painful. On the following day the arm was painful and itchy, and the patient scratched it until he drew blood. Spasms of the throat muscles occurred when he attempted to drink; towards evening the spasms became worse; he was unable to swallow anything and could not sleep. In the morning he was unable to swallow anything, and any attempt to swallow brought on a violent spasm, as did the sight or even the mention of water; after each spasm he brought up a little blood-stained watery fluid, containing dark material like coffee-grounds. The subcutaneous tissue of the neck and front of the chest, and of the back to a slight extent, was emphysematous, apparently from escape of air from the trachea or larynx during spasms; the pupils were equally dilated during spasms and normal between. The boy died on the afternoon of 7th June, and the body was buried without examination. Some vomited matter was sent to the South African Institute for Medical Research, but was, of course, useless for examination. No information of the case reached this Department until several weeks later, so that another opportunity of making a definite diagnosis was lost.

The two cases mentioned, although the possibility of tetanus or some similar disease cannot be excluded, tend to strengthen the disquieting suspicion mentioned in the 1924 report that there may be sparse and smouldering rabies infection amongst the wild fauna of South Africa. Vigilance should be exercised by all concerned, and any suspected case in man or animals should be promptly reported for investigation; animal suspects should, if possible, be preserved alive, as decomposition greatly increases the difficulties of pathological examination. In fatal suspected cases in man a careful post-mortem examination should be made, and the brain, upper portion of the spinal cord, and a quantity of the cerebro-spinal fluid sent, packed in ice and by special messenger, to the South African Institute for Medical Research, Johannesburg, or the Government Pathological Laboratories at Cape Town or Durban, whichever of the three is the nearest, the institute or laboratory being first advised by telegraph or telephone and requested to have everything in readiness for examination of the materials immediately on receipt.

9. *Smallpox and Vaccination.*—The following tables show the occurrences of smallpox and the public vaccinations performed during the year. Although the Union has never been entirely free from smallpox during the period, no serious prevalence has occurred. Ten of the cases, with one death, occurred in Johannesburg. Owing to the non-prosecution of defaulters pending the further consideration by Parliament of the “conscientious objector” question, vaccinations amongst all classes of the population are tailing off, and concurrently the unvaccinated section of the population is increasing—a state of matters which, if not remedied before long, may lead to a severe epidemic.

TABLE N.—(i) SMALLPOX : CASES AND DEATHS REPORTED DURING THE YEAR ENDED 30TH JUNE, 1926.

Province.	Number of Districts Affected.	European.		Non-European.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape.....	12	5	—	31	1	36	1
Natal.....	—	—	—	—	—	—	—
Transvaal.....	10	1	—	28	1	29	1
Orange Free State	4	—	—	7	—	7	—
UNION.....	26	6	—	66	2	72	2

TABLE N.—(ii) STATE AS TO VACCINATION OF CASES OF SMALLPOX REPORTED DURING THE YEAR ENDED 30TH JUNE, 1926.

Particulars.	European.		Non-European.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
*Previously vaccinated.....	2	—	16	—	18	—
Unvaccinated.....	4	—	50	2	54	2
TOTAL.....	6	—	66	2	72	2

\* In most cases many years previously.

TABLE O.—(i) VACCINATION OF INFANTS AND CHILDREN IN THE CLASSES OF THE POPULATION WHICH REGISTER BIRTHS, YEAR ENDED 30TH JUNE, 1926.

(These figures do not include revaccinations of twelve-year-old children.)

Particulars.	Cape.		Transvaal.		Natal.			Orange Free State.	Union.
	Cape District.	Remainder of Province.	Rand Area.	Remainder of Province.	Durban.	Pietermaritzburg.	Remainder of Province.		
Births entered in vaccination register.....	9,705	33,846	8,066	10,058	1,947	581	1,780	5,523	71,506
Successfully vaccinated.....	3,832	1,852	638	1,156	558	167	697	489	9,389
Insusceptible to vaccination...	19	6	1	—	14	7	15	1	63
Vaccination postponed owing to illness.....	28	35	27	41	47	14	46	44	282
Previously had smallpox.....	3	—	—	—	—	—	—	—	3
Deaths of infants under two years registered.....	1,997	1,595	756	638	116	33	124	214	5,473
Ratio per cent. of vaccinations registered to births registered during the year (after allowing for deaths of infants under two years)....	49·7	5·7	8·7	12·3	30·5	30·5	42·1	9·2	14·2

TABLE O.—(ii) REVACCINATION OF TWELVE-YEAR-OLD EUROPEAN CHILDREN IN NATAL, YEAR ENDED 30TH JUNE, 1926.

Particulars.	Durban.	Pietermaritzburg.	Remainder of Province.	Total.
Registration of twelve-year-old European children...	1,142	552	828	2,522
Successfully vaccinated.....	517	237	494	1,248
Insusceptible to vaccination	35	38	47	120
Vaccination postponed owing to illness.....	22	9	12	43
Previously had smallpox...	—	—	—	—
Ratio percentage of vaccinations to twelve-year-old registrations.....	45·3	42·9	59·7	49·4

TABLE O.—(iii) PUBLIC VACCINATIONS DURING THE YEAR ENDED 30TH JUNE, 1926.

Province.	Number of Centres at which Public Vaccinations were held.		Number of Visits of Public Vaccinators to Centres.		Numbers Vaccinated.				Total.
	Urban.	Rural.	Urban.	Rural.	Europeans.		Non-Europeans.		
					Primary.	Revaccination.	Primary.	Revaccination.	
Cape.....	185	1,465	544	1,465	9,886	1,391	105,729	57,117	174,123
Natal.....	49	367	132	367	1,867	402	39,375	1,655	43,299
Orange Free State.....	51	194	103	194	2,846	365	8,069	952	12,232
Transvaal.	99	544	797	544	16,914	4 004	110,664	72,403	203,985*
<b>TOTAL...</b>	<b>384</b>	<b>2,570</b>	<b>1,576</b>	<b>2,570</b>	<b>31,513</b>	<b>6,162</b>	<b>263,837</b>	<b>132,127</b>	<b>433,639</b>

\* Includes 35,025 persons vaccinated by the Medical Officers of Health, Johannesburg, in connexion with an outbreak of smallpox in that town.

10. *Tuberculosis.*—(a) *General.*—Notifications of this disease shown in Table G do not convey any adequate idea of its prevalence, as the great majority of native cases, a considerable percentage of the coloured, and even some European cases are never seen by a medical practitioner and so escape notification.

The disease remains a serious menace, especially to the native and coloured population. There is grave reason to believe that its prevalence is increasing amongst the natives, especially in districts where the male adults recruit freely for work on the mines or in the towns. It would further appear that the present system of medical examination and supervision of mine labour on the Rand cannot be relied upon in all cases either to exclude the infected or to detect the disease promptly in members of the native labour force of the mines, and that the infected mine labourer is a grave danger not only to his fellow labourers, but also to the European miners. The remedying of this state of matters on the mines is, to a large extent, an administrative and diagnostic problem, and steps to improve the existing machinery and arrangements are being taken by the Chamber of Mines. Unfortunately, however, our knowledge of the time, age, and place at which infection of natives most frequently occurs, its precise mechanism and determining or favouring circumstances, the amount of latent infection amongst natives on first recruitment, and the total amount (both open and latent) of infection amongst the natives in their kraals and locations is so incomplete that the problem of prevention and control cannot at present be effectively handled. For several years past the need for research and investigation in connexion with this matter has been recognized by all concerned; it has also been recognized that the very limited resources, as regards both funds and personnel, of the South African Institute for Medical Research were inadequate for the purpose, and that special provision would be necessary.

Last year the matter was raised at an interview which the High Commissioner for the Union had with the Medical Committee of the League of Nations at Geneva, and was further discussed at a meeting which the Secretary for Public Health had with that body at Geneva in October, 1925. The Medical Committee of the League is keenly interested in tuberculosis amongst native races, and has a special sub-committee dealing with the matter. At the meeting the Secretary for Public Health emphasized the need for a carefully

thought-out and comprehensive scheme of investigation and research, both field and laboratory; the world-wide importance of the matter; and the unique facilities available in South Africa. He suggested that such an investigation might be organized jointly by the League Committee and the authorities in South Africa, each party contributing, say, half the total costs. The attitude of both the tuberculosis sub-committee and the committee itself was very friendly and helpful. The committee concurred as to the necessity for a comprehensive investigation, and suggested the possibility of utilizing the tuberculosis vaccine, "BCG," developed during the past two or three years by Professor Calmette, but the position emerged that the committee had no funds or research workers which could, at present, be made available for the purpose; it was, however, prepared to advise and assist, and "in principle to co-operate, and to consider the question further on receipt of subsequent information from the health authorities in South Africa."

A few weeks later the Secretary for Public Health visited the Pasteur Institute, Paris, and there discussed the matter with Professor Calmette, who thought that if any considerable proportion of mine native labourers was entirely free from tuberculosis, as indicated by the Von Pirquet or other reliable test, his "BCG" vaccine should certainly be tried; the first step, however, would be to determine the proportion so free.

Since the Secretary's return from Europe, the South African Institute for Medical Research and the Chamber of Mines have been consulted. Both bodies consider that a comprehensive field and laboratory investigation is necessary; that, as the League of Nations is unable to contribute towards the funds, the investigation should be organized and controlled by the authorities in South Africa, the advice and assistance of the League being solicited on any special point which might arise; that the arrangements should include a mobile research unit with field laboratory, under the direction of an epidemiologist and bacteriologist of standing and with special experience in tuberculosis work; and that provision should be made for carrying on the scheme for a period of at least three years. It has been suggested that the cost, estimated at about £6,000 a year, might be defrayed, one-third by the Government, one-third by the Chamber of Mines, and the remaining third from the Deferred Pay Fund derived from interest on deferred pay of mines native labourers. A final decision with regard to the scheme has not yet been reached.

(b) *Nelspoort Sanatorium*.—As mentioned in previous reports, this institution was opened for the reception of patients on 5th May, 1924. It was formally opened and inaugurated by H.R.H. the Prince of Wales on 25th July, 1925—a bronze bas-relief of Mr. John Garlick, to whose initiative and generosity the establishment of the institution is largely due, being unveiled by His Royal Highness on the same occasion.

The following table summarizes the work of the institution during the year:—

TABLE P.—ADMISSIONS, DISCHARGES, DEATHS, ETC., AT NELSPOORT SANATORIUM.

Heading.	Total.	European.			Non-European.		
		Male.	Female.	Total.	Male.	Female.	Total.
In sanatorium on 30th June, 1925	77	26	25	51	11	15	26
Admitted during year.....	237	90	78	168	37	32	69
TOTAL.....	314	116	103	219	48	47	95
Died during year.....	12	5	—	5	3	4	7
Discharged during year.....	222	86	75	161	30	31	61
TOTAL.....	234	91	75	166	33	35	68
In sanatorium on 30th June, 1926	80	25	28	53	15	12	27

Of the 222 patients discharged, 72 were noted as "much improved," 110 as "improved," 34 as "stationary," and 6 as "worse." Of the total admissions, 195 of the patients were free, being paid for half by the local authority and half from the Department's Vote; 18 were part-paying or contributing; and 24 were full-paying. There are 56 beds for Europeans and 36 for native and coloured patients, 92 beds in all; there is no special accommodation for children. The average daily number of patients was: Europeans, 51·3; coloured and native, 20·4; total, 71·7. The average stay of European patients was 97 days and of coloured and native patients 110 days. Usually there has been a considerable waiting list of European patients. The European accommodation is inadequate for present needs; at the end of the year two solarium pavilions, one for European males and the other for European females, and each to hold ten beds, were under construction.

Treatment has been on the usual sanatorium lines, and the results have, on the whole, been very satisfactory. Artificial pneumo-thorax treatment has been given to three patients, with successful results in each case. A serious drawback to this method is the difficulty in many cases of arranging for continuance of the treatment after discharge from the sanatorium.

A considerable percentage of the patients sent in by local authorities have been of advanced type, some of them quite unsuitable for sanatorium treatment. It must be recognized that the cost of hospitalizing the consumptive, even for a few months, is considerable; it is highly desirable that only suitable cases should be sent, and that local authorities should devote more attention to the home supervision and health education of the consumptive by means of tuberculosis dispensaries, health visitors, and so forth, temporary movable shelters for the accommodation of patients being provided by the local authority in necessitous cases. A pamphlet giving information, advice, and suggestions on these lines is being prepared by the Department and will shortly be issued to all local authorities.

11. *Typhus Fever*.—The following table shows the cases and deaths reported during the year:—

TABLE Q.—TYPHUS FEVER: CASES AND DEATHS REPORTED DURING THE YEAR ENDED 30TH JUNE, 1926.

Province.	Number of Districts Affected.	European.		Non-European.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape .....	50	22	—	679	75	701	75
Natal.....	11	25	—	62	8	87	8
Orange Free State.....	13	6	1	266	41	272	42
Transvaal.....	9	2	—	73	21	75	21
UNION.....	83	55	1	1,080	145	1,135	146

Judging from the reports and notifications received, the disease was comparatively quiescent during the year. There was, however, reason to believe that there were unreported outbreaks and prevalences in some of the Transkeian districts.

Sporadic cases, both in Europeans and natives, continue to occur in Durban, the disease being detected by the routine application of the Weil-Felix test to all blood specimens sent in; the diagnosis so made has, in a number of cases, been subsequently confirmed clinically.



Attention is again called to the fact that the symptoms of the form of typhus usually met with in South Africa are often obscure and indefinite, and its diagnosis frequently difficult, so that unless special care is taken and a sharp lookout kept for the disease, cases may go unrecognized and unreported. The Weil-Felix blood test is very useful as a diagnostic aid, and should be resorted to in any case where there is the least reason to suspect typhus.

12. *Venereal Diseases*.—The following table summarizes the work in connexion with venereal diseases done by the district surgeons, local authorities, and institutions during the year:—

TABLE R.—VENEREAL DISEASES: CASES TREATED AND ATTENDANCES, YEAR ENDED 30TH JUNE, 1926.

Locality.	In Hospital.				Outdoor Attendances.				Total.
	Syphilis.		Gonorrhœa and other Venereal Diseases.		Syphilis.		Gonorrhœa and other Venereal Diseases.		
	Euro-pean.	Non-Euro-pean.	Euro-pean.	Non-Euro-pean.	Euro-pean.	Non-Euro-pean.	Euro-pean.	Non-Euro-pean.	
<b>1. By District Surgeons—</b>									
Cape.....	11	512	16	49	171	2,528	160	323	3,770*
Natal.....	82	152	74	71	37	1,005	24	143	1,588*
Transvaal.....	7	124	2	19	105	3,059	80	104	3,500*
Orange Free State....	23	266	19	47	110	2,458	96	253	3,272*
<b>2. At Institutions—</b>									
Barberton.....	—	178	—	—	—	—	—	—	178
Bloemfontein.....	5	123	8	12	15	87	13	22	285
Bochem.....	—	1,195	—	20	—	—	—	—	1,215
Cape Town.....	15	420	4	39	2,327	4,191	3,362	2,150	12,508
Colesberg.....	—	12	—	—	—	12	—	—	24
Cradock.....	—	54	—	—	—	—	—	—	54
East London.....	—	—	—	—	120	321	126	71	638
Elim.....	—	1,285	2	2	—	820	—	—	2,109
Johannesburg.....	—	—	—	—	4,356	—	3,306	—	7,662
Kimberley.....	4	226	4	39	20	1,036	5	23	1,357
King William's Town	—	107	—	—	—	18	—	—	125
Kuruman and Oli- phantshoek.....	—	25	—	—	9	413	—	—	452
Mpahlele (Pietersburg district).....	—	48	—	—	—	283	—	—	336
Oudtshoorn.....	—	—	—	—	25	270	—	—	295
Pietermaritzburg.....	—	73	—	—	188	479	56	112	913
Port Elizabeth.....	5	48	6	7	22	81	44	39	252
Port St. Johns.....	—	—	—	—	—	106	2	19	127
Pretoria.....	—	—	—	—	614	3,933	106	44	4,697
Rietfontein.....	120	2,355	125	916	3,558	3,892	—	—	10,966
Secucuniland (Jane Furze Memorial)....	—	124	—	4	—	8,156	—	2	8,286
Stellenbosch.....	—	15	—	—	15	203	—	—	238
Victoria West.....	—	4	—	—	—	35	—	—	39
Vryburg.....	—	118	—	—	—	679	—	—	797
<b>TOTAL.....</b>	<b>272</b>	<b>7,469</b>	<b>260</b>	<b>1,225</b>	<b>11,692</b>	<b>34,080</b>	<b>7,380</b>	<b>3,305</b>	<b>65,683</b>

\* Individual patients, each of whom attends on an average three times.

Free issues of anti-syphilitic drugs to the value of £5,830 were made by the Department during the year.

The system of distributing mercurial ointment by justices of the peace, sub-native commissioners, missionaries, and other approved persons has been continued with satisfactory results.

Arrangements have been made with the municipalities of Johannesburg and Pretoria under which these local authorities pay at an agreed rate (Europeans 8s. 6d., natives 3s. per day each, plus rail transport of Pretoria cases) for cases sent in by them to the Rietfontein Hospital, the local authority subsequently obtaining a two-thirds refund under Section 66 of the *Public Health Act*.

The Lock Hospital, Port Elizabeth, hitherto administered and managed by the Government, was taken over by the municipality in March, 1926.

Many local authorities, with the encouragement of the Government refund provisions under Section 66 of the *Public Health Act*, show increasing interest and activity in measures against venereal disease. A number of new clinics was established during the year and some additional hospital accommodation provided. Experience shows the great advantages of having such clinics or accommodation in or in connexion with general hospitals or similar institutions. In the large centres, and especially in the large native labour districts, the native or coloured prostitute is a potent agent in spreading infection. Dr. Mehliß, Medical Superintendent of the Rietfontein Hospital, reports that a number of natives were admitted suffering from syphilis, and they attributed their infection to one particular female in the George Goch location. Investigations were instituted; the female in question was located, found to have severe and virulent syphilis, and removed to the hospital. The male patients admitted to the hospital who attributed their infection to her numbered 52. This happened some years ago, but similar, though less striking, occurrences still take place. It is to be hoped that local authorities will utilize their powers under the *Natives (Urban Areas) Act* to expel and exclude females of this type. The same officer calls attention to the danger of infection from glasses and other drinking vessels in bars, tearooms, etc. He points out that in racecourse bars, for instance, the "washing" of the glasses is usually done by natives, who merely dip them in a tub of water (which soon becomes very dirty), and then, perhaps after wiping with a dirty cloth, place them on a draining board or tray ready for the next customer. He states that during the past twenty years or so he has had at least thirty cases of syphilis infected in this way, all starting with a chancre on the lip. Persons owning or in charge of bars, cafés, tearooms, and similar establishments should exercise more care in this matter than has often been the case hitherto. The best plan is sterilization of glasses and drinking vessels by steam or boiling water after each use, but where this is impracticable, thorough washing with *clean* water and wiping with a *clean* cloth should invariably be done. Local authorities should exercise supervision to ensure that this is carried out.

#### IV.—GENERAL.

1. *Sanitation, Refuse Disposal, etc.*—Reference has already been made in this report to the Department's arrangements for systematic general inspections of local authority areas and to the excessive prevalence of enteric fever in many centres. There is also an undue prevalence of diphtheria and diarrhoeal diseases in many localities. In most centres which have not got a water-carried sewerage system, improvement in closets and in the system of removal and disposal of night-soil, refuse, and manure is much needed. Closets of unsatisfactory construction, with earth or wooden floors; too much space between the seat and the top of the pail; a boxed-in enclosure for the pail, the interior of which cannot easily be cleaned and which consequently is very often filthy; no means of excluding flies, which frequently oscillate between the night-soil pail and the kitchen and dining-room; insufficiently frequent night-soil removals;

unsuitable and filthy night-soil carts or wagons ; no proper means of cleansing pails before returning them to the closets ; unsatisfactory arrangements for removal of refuse and manure (or no arrangements of this kind whatsoever) ; unsuitable depositing sites for night-soil and refuse, with no precautions against fly-breeding ; badly managed and dirty hotels, with bad sanitary arrangements : these are the defects most frequently found.

Standardized types of pail-closets and seat fittings and a uniform and approved type of night-soil pail are much needed ; these matters are being carefully inquired into by the Department in conjunction with the Central Housing Board. A revised and enlarged edition of the Department's pamphlet No. 245 (Health), "Flies and Filth Diseases," first issued in 1921, is being prepared for publication.

2. *Housing*.—The report (U.G. 19—'26) of the Central Housing Board for 1925 gives full details of the working of the *Housing Act*, No. 35 of 1920, since it became law ; these are summarized in the following table :—

TABLE S.—HOUSING ACT, NO. 35 OF 1920 : WORKING FROM PROMULGATION (16TH AUGUST, 1920) TO 30TH JUNE, 1926.

Pro- vince.	Allot- ments Sanctioned.	Loan Applications Approved.			Loan Issues.	Number of Houses.					
		European.	Coloured and Native.	Total.		Completed.	Under Construction.	Approved, but not yet commenced.	Total.	Total for European Occupation.	Total for Coloured and Native Occupation.
Cape...	£ 1,002,508	£ 609,048	£ 238,402	£ 847,450	£ 725,271	1,798	133	384	2,315	*722	†1,593
Natal..	487,011	408,589	—	408,589	396,322	336	7	5	348	348	—
Orange Free State..	378,560	352,039	21,625	373,664	344,172	490	394	307	1,191	351	‡840
Trans- vaal..	764,853	566,808	125,393	692,201	628,020	1,421	40	143	1,604	653	§946
UNION.	2,632,932	1,936,484	385,420	2,321,904	2,093,785	4,045	574	839	5,458	2,079	3,379

\* Includes a hostel to accommodate 86 persons.

† Includes 433 single rooms.

‡ Represents approximate number of dwellings to be erected out of loans granted for use exclusively in the purchase of materials to be advanced to coloured persons and natives building their own homes.

§ Includes 82 single rooms.

The Government's total commitment to date stands at £2,581,000, of which, on 1st April, 1926, there remained to be provided £687,000. Of this, £437,000 has been provided on the current year's (1926-27) Estimates ; the balance of £250,000 will be provided in 1927-28.

From the commencement of the Act to 30th June, 1926, the loans met out of capital repayments becoming available for reissue totalled £135,934. This £135,934 added to the Government's commitment to date of £2,581,000 makes a total of £2,716,934, which represents the total sum available for allocation up to 30th June, 1926. Deducting from this £2,716,934 the sum of £2,632,932, representing (as noted in Table S above) the total allotments sanctioned up to 30th June, 1926, at that date an amount of £84,000 in round figures is left still available for allocation, of which £74,000 is earmarked for purely native housing and £10,000 for European and coloured (as distinct from native) housing.

At the present date the outstanding applications, for which there are no available funds, from local authorities for loans for European and coloured (as distinct from native) housing total over £600,000, an amount which would doubtless be considerably increased were further funds available.

The Housing Committee of 1919 estimated that over £7,000,000 would be required to meet the more urgent and pressing needs for housing in the Union.

The housing position in several of the larger centres, notably Cape Town and Port Elizabeth, is still very acute, more especially as it affects the poorer section of the European community and the coloured and native population; there is also need for more houses in a number of other centres. In regard to the housing of coloured persons, the need for improvement of existing conditions is all too apparent at most urban centres in the Union. Private enterprise and the speculative builder have practically ceased to function in regard to the class of house of which there is most need, and there seems little likelihood of activity in this direction being resumed. If local authorities are left to raise money from outside sources, little is likely to be done except perhaps in one or two of the larger centres; the raising process is usually expensive, the previous consent of the ratepayers is necessary, vested interests are apt to come into play, and as often as not the local authority is baulked or defeated in its efforts to improve matters.

All the world over the provision of sanitary dwellings for the people is coming more and more to be regarded as a national concern. It is an extremely important and, indeed, essential factor in promoting public health, directly and indirectly. Apart altogether from this, it is to the advantage of the State to encourage people to build and possess their own homes. The loan arrangements under the *Housing Act* are perfectly sound and have worked very satisfactorily so far. There is good security and the money is lent at an economic rate of interest, so that, apart from the small overhead cost of administration, it merely means utilizing the credit of the State to borrow money for the purpose of helping the man of limited means to build his own home or providing him with accommodation at a reasonable rental.

The economic and general aspects of the housing question are dealt with at considerable length in the report of the Cost of Living Committee (1925) (U.G. 47—'25), which recommends the continuation of the Central Housing Board constituted under the *Housing Act*, No. 35 of 1920. The matter is also discussed in the two reports of the Economic and Wage Commission (1925) (U.G. 14—'26), from which the following extracts are made:—

Report by Commissioners Stephen Mills (chairman), Henry Clay, and John Martin :

“ 343. A comparison of rents with wages in the principal towns suggests that a rise in wages would simply lead to a further rise in rents. A direct attack on the shortage of houses would seem to be the only remedy for this unfortunate state of things, and for this to be successful the cost of building must be reduced. . . .”

Report by Commissioners Andrews, Lucas, and Rood :

“ 82. . . . In view of the tradition which has been established in many parts of South Africa of requiring a very high and rapid return for money expended in building, it appears to be necessary that the State should undertake to assist on a very large scale the provision through local authorities of houses, even employing compulsion where a local authority is dilatory in taking advantage of such assistance. With the low rate of interest at which the State can borrow, it will be possible to provide houses, without loss to the State, at a monthly or weekly payment which will be considerably below the prevailing rents and at the same time enable the tenants to become owners of their own houses.”

Representations urging the Government to make further loan funds available to local authorities for housing have been made by the Council of Public Health, municipal associations, the South African Health Officials' Congress, and other public bodies interested in public health and social welfare.

Experience has shown that under present conditions the maximum amount which can be advantageously expended annually under the *Housing Act* is about £500,000, but for this it is necessary that provision be made a year or so in advance ; if decisions can only be communicated to local authorities and prospective builders of dwellings in June or July, after the Loan Estimates have been passed by Parliament, only a small proportion of the amount voted can be spent before the end of March ensuing. The funds already voted or promised will suffice to carry on until 31st March, 1927, and it has been strongly recommended that Government should, as soon as possible, undertake to provide a further £1,000,000 for loans for European and coloured housing, spread over a period of, say, three years, and give authority to proceed on this basis. In allotting any further funds provided, it is considered that applications from local authorities for financial assistance for carrying out, in terms of Section 5 of the *Housing Act*, schemes designed to meet the needs of the poorer classes of the community should receive preference over applications for granting loans to individuals in terms of Section 6.

At the end of June, 1926, funds had been allotted to 85 local authorities, as compared with 59 at the end of 1924 and 30 at the end of 1921, indicating how more and more local authorities, both large and small, are taking advantage of these loan facilities. It would be regrettable if at this juncture a set-back were given to their efforts.

The *Local Loans Act*, No. 19 of 1926, passed during the last Session of Parliament, provides for the establishment of a Local Loans Fund controlled by the Public Debt Commissioners. The commissioners are empowered to grant loans to local authorities for a number of purposes, including " the purchase of land, the erection of houses, and the granting of loans under any housing scheme which a local authority is by law empowered to carry out " [section 7 (n)], and " the establishment of locations and native villages, the erection of and the granting of loans for the erection of dwellings for the occupation of natives or coloured persons " [section 7 (o)].

From this Department's viewpoint, the urgent need is the provision of more funds for housing, it being immaterial through which medium such additional funds are provided by Government. No loans for housing have, up to the present, been made under the *Local Loans Act*, but in respect of loans made for other purposes as provided in that Act it is understood that interest at the rate of 6 per cent. per annum has been fixed. In the case of housing, it is considered that payment on the capital outlay of interest at the rate of 6 per cent. will add to the difficulties of local authorities in carrying out schemes which are designed to cater for the poorer classes, and for which there is most need. Even with interest at 5 per cent., which is at present payable on loans made under the *Housing Act*, there have been instances where local authorities have found difficulty in securing a rental which is economic and at the same time within the means of the occupier. In dealing with the problem of the improvement of the housing conditions of the poorer classes, local authorities would be encouraged to face their responsibilities in this connexion if the money could be advanced at not more than the rate at which the State can borrow.

There is also the further consideration that under Section 7 of the *Local Loans Act* housing is only one of many purposes for which loans may be granted, which raises the fear that its claims may be subordinated as being of less general public interest than other local works for which funds are required.

As bearing on the question of present-day building costs, and as an outcome of representations made by the Central Housing Board, it is to be mentioned that the Department of Public Health, in conjunction with the

Native Affairs Department, recently raised with the Department of Labour the question of exempting from the provisions of the Wages Agreement made under the *Industrial Conciliation Act*, No. 11 of 1924, persons employed on the erection of houses for occupation by coloured persons and natives on land lawfully set aside by a local authority for the purpose of a location. The rental paid by occupiers of municipal houses in locations is fixed on a basis sufficient to cover interest and redemption, and if the wages laid down in the agreement are paid in connexion with the erection of such dwellings, the rental will have to be considerably increased. It is therefore hardly just that persons who themselves do not, in practice, participate in the benefit of a fixed skilled wage, should be compelled to pay for a class of labour above their standard which they do not require and the immediate effect of the employment of which is payment of rental above their means. At the instance of the Department of Labour, the matter was considered at the last meeting of the National Industrial Council of the Building Industry, which body intimated that applications for exemption in respect of work of the nature in question would receive sympathetic consideration. In a circular explaining the position, local authorities have accordingly been advised to make application through the Secretary for Labour to the National Industrial Council of the Building Industry, Johannesburg, for the necessary exemption in each specific instance where the erection of dwellings of the nature mentioned is in contemplation.

3. *Town Planning*.—The last annual report referred to the enactment of Section 17 of Act No. 46 of 1925, and the promulgation of Regulations under Section 32 of the *Public Health Act* to be in force within the Divisional Council areas of the Cape and Stellenbosch. Since then these regulations have been adopted by the divisional councils of Port Elizabeth and Malmesbury. The regulations are unsatisfactory in several respects owing to the limited statutory basis on which they had to be framed; at the best, they are only a makeshift to prevent matters from becoming worse pending the passing of comprehensive town-planning legislation.

At its meeting in March last the Council of Public Health passed the following Resolution: "That this Council regrets the delay that has already taken place in effectively dealing with the problem of town planning, and urges that the Provincial Councils should, as soon as possible, make use of the powers they now possess for dealing with this matter under Section 17 of Act No. 46 of 1925." Copies of this resolution were transmitted to the four Provincial Administrations. The Cape and Natal Provincial Administrations replied that they were preparing draft Ordinances, which the Administrators hoped to introduce during next session of the Provincial Council; the Free State Provincial Administration "knows of no conditions calling for urgent action as regards the introduction of legislation with regard to town planning, and is adopting a waiting attitude"; the Transvaal Provincial Administration's reply was much to the same effect, and they asked to be informed of the precise grounds for the Council's resolution. The position is certainly not so urgent and serious in the Transvaal and Free State as it is in the other two Provinces, but, in the opinion of the Department of Public Health, the existing Townships Ordinances in the two first-mentioned Provinces might usefully be supplemented and brought up to date in certain directions, advantage being taken of the additional powers conferred on Provincial Councils by Section 17 of Act No. 46 of 1925.

4. *Child Welfare*.—The following table gives the salient figures for European children for the past eleven years:—

**YELLOW** ... Country suitable for abundant population of gerbilles and other rodents which are known to be, or to have been within last few years, plague-infected.

**BLUE** ... Country similar to above but in which all rodents so far as known are still free from plague

**RED** ... Country with sparse gerbilles population but in which other rodents less liable to waves of plague infection exist. No rodent plague infection has occurred in these areas with the exception of a small localized outbreak among striped and multimammate mice in bush country near Uitenhage 1923 and 1924 and a similar outbreak among spring hares and ground squirrels in the Hanover District in 1924.

**HATCHING** ... Shows extension of plague infection in gerbilles from July, 1925, to August, 1926.

**UNCOLOURED** ... Unsurveyed.

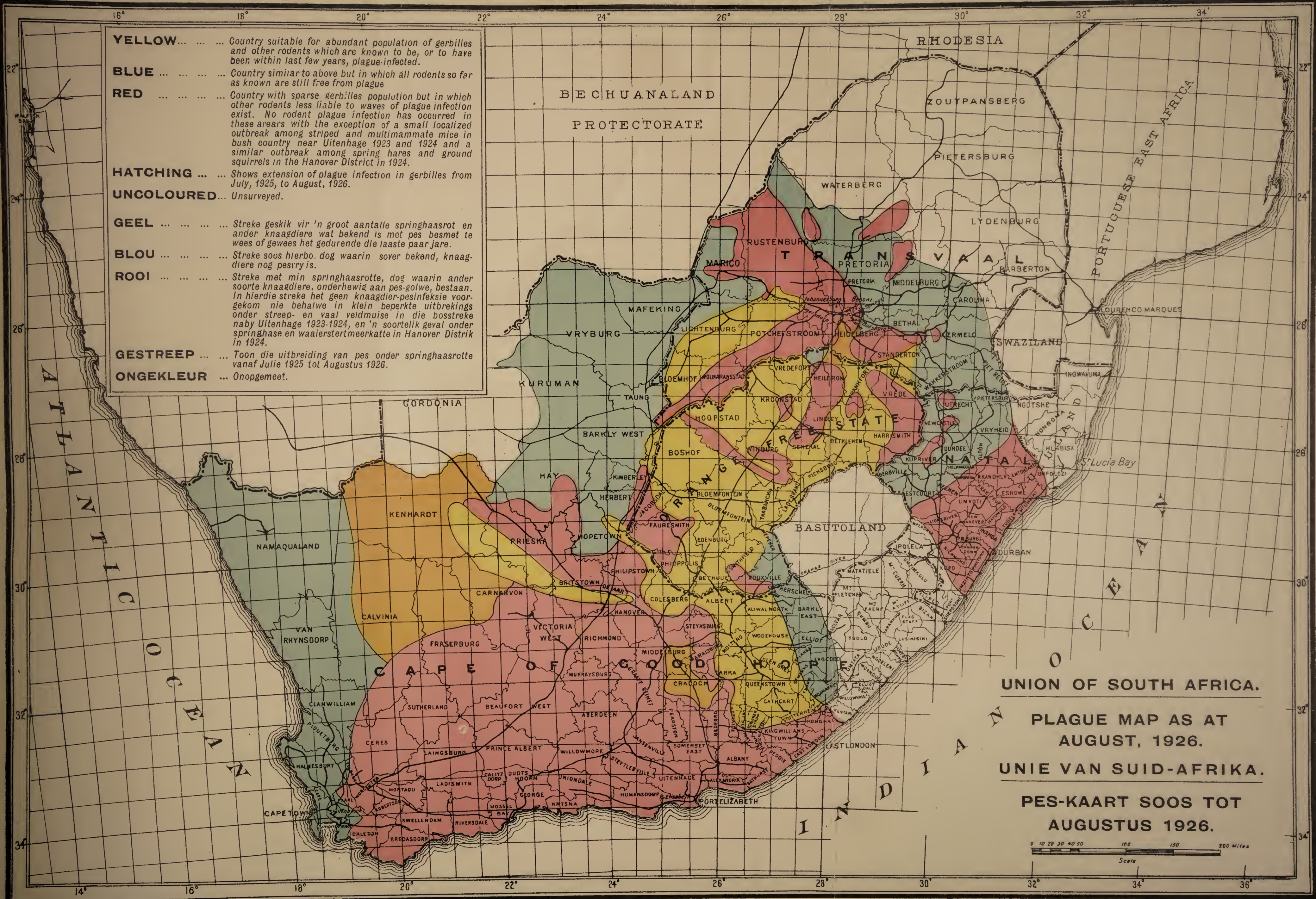
**GEEL** ... Streke geskik vir 'n groot aantal springhaasrot en ander knaagdiere wat bekend is met pes besmet te wees of gewees het gedurende die laaste paar jare.

**BLOU** ... Streke soos hierbo. dog waarin sover bekend, knaagdiere nog pesvry is.

**ROOI** ... Streke met min springhaasrotte, dog waarin ander soorte knaagdiere, onderhewig aan pes-golwe, bestaan. In hierdie streke het geen knaagdier-pesinfeksie voorgekom nie behalve in klein beperkte uitbrekings onder streep- en vaal veldmuise in die bosstreke naby Uitenhage 1923-1924, en 'n soortelik geval onder springhase en waaierstertmeerkatte in Hanover Distrik in 1924.

**GESTREEP** ... Toon die uitbreiding van pes onder springhaasrotte vanaf Julie 1925 tot Augustus 1926.

**ONGEKLEUR** ... Onopgemeet.



UNION OF SOUTH AFRICA.  
 PLAGUE MAP AS AT  
 AUGUST, 1926.  
 UNIE VAN SUID-AFRIKA.  
 PES-KAART SOOS TOT  
 AUGUSTUS 1926.

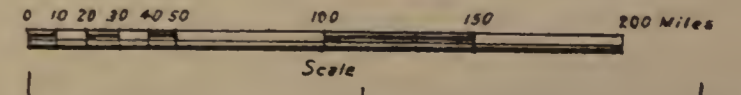






TABLE T.—EUROPEAN CHILDREN: BIRTHS AND DEATHS REGISTERED AND DEATH-RATE PER 1,000 BIRTHS, 1915-25.

Year.	Cape.		Natal.		Transvaal.		Orange Free State.		Union.						
	Total European Births Registered.	Deaths of European Children under One Year.	Total European Births Registered.	Deaths of European Children under One Year.	Total European Births Registered.	Deaths of European Children under One Year.	Total European Births Registered.	Deaths of European Children under One Year.	Total European Births Registered.	Deaths of European Children under One Year.					
		Death-rate per 1,000 Births.		Death-rate per 1,000 Births.		Death-rate per 1,000 Births.		Death-rate per 1,000 Births.		Death-rate per 1,000 Births.					
1915.....	17,745	1,535	86.50	2,832	186	66.03	15,012	1,343	89.46	4,882	428	87.67	40,471	3,492	86.31
1916.....	17,333	1,512	87.23	2,773	177	63.83	16,010	1,467	91.63	5,080	389	76.57	41,196	3,545	86.05
1917.....	17,521	1,436	81.96	2,756	171	62.05	15,486	1,309	84.53	4,959	353	71.18	40,722	3,269	80.27
1918.....	17,775	1,496	84.16	2,924	176	60.19	15,977	1,383	86.56	4,906	357	72.77	41,582	3,412	82.05
1919.....	16,749	1,351	80.66	2,910	191	65.64	15,338	1,326	86.45	4,727	382	80.81	39,724	3,250	81.81
1920.....	18,425	1,654	89.77	3,256	235	72.17	16,768	1,576	93.99	4,996	448	89.67	43,445	3,913	90.07
1921.....	18,062	1,382	76.51	3,370	203	60.24	16,582	1,374	82.86	5,288	379	71.67	43,302	3,338	77.09
1922.....	18,248	1,294	70.91	3,294	180	54.64	16,370	1,292	78.92	4,920	357	72.56	42,882	3,123	72.91
1923.....	18,296	1,353	73.95	3,229	197	61.01	15,619	1,261	80.74	5,037	328	65.12	42,181	3,139	74.42
1924.....	18,730	1,296	69.19	3,410	273	80.06	15,287	1,171	76.60	4,919	382	77.66	42,346	3,122	73.73
1925*.....	18,366	1,343	73.12	3,509	206	58.71	16,348	1,059	64.78	5,188	361	69.58	43,411	2,969	68.39

\* Unaudited figures for deaths and infantile mortality rate, subject to revision.

The grant-in-aid of £1,000 per annum to the South African National Council for Child Welfare in respect of the mothercraft training centre in connexion with the Lady Buxton Home, Claremont, Cape, was continued. This training centre did very useful work during the year, and its influence is extending. No other training centre has as yet been established. Increasing interest in child welfare matters is being taken by local authorities and the public in most centres in the Union; 49 child welfare societies are now affiliated under the National Council.

5. *Opium and Habit-forming Drugs.*—In co-operation with the Police and the Commissioner of Customs and Excise, the enforcement of the regulations with regard to opium, dagga, and other habit-forming drugs has been actively continued during the year. The following table shows the prosecutions and convictions:—

TABLE U.—SHOWING PROSECUTIONS AND CONVICTIONS UNDER LAWS RELATING TO HABIT-FORMING DRUGS DURING THE PERIOD 1ST JULY, 1925, TO 30TH JUNE, 1926.

Province.	European.		Native.		Asiatic.		Other Coloured.		Total.	
	Prose-cutions.	Convic-tions.	Prose-cutions.	Convic-tions.	Prose-cutions.	Convic-tions.	Prose-cutions.	Convic-tions.	Prose-cutions.	Convic-tions.
Cape.....	24	20	440	421	12	9	810	800	1,286	1,250
Natal.....	2	1	1,148	1,125	53	53	19	19	1,222	1,198
Transvaal.....	16	11	1,208	1,165	44	29	72	72	1,340	1,277
Orange Free State	4	4	429	410	—	—	48	40	481	454
UNION.....	46	36	3,225	3,121	109	91	949	931	4,329	4,179

Of the total of 4,329 prosecutions, 4,282 were in respect of dagga, 46 of opium, and 1 of morphia; 37 lb. 3 oz. of opium and considerable quantities of dagga were seized and confiscated.

The total quantities of these drugs authorized to be imported into the Union during the year ended 30th June, 1926, were: Opium, 602 lb. 336 gr.; morphine, 63 lb. 13 oz. 354 gr.; cocaine, 45 lb. 12 oz. 236 gr.; heroin, 3 lb. 8 oz. 194 gr.; cannabis indica, 11 lb. 8 oz. 37 gr.

The following exports of habit-forming drugs from the Union were authorized during the year ended 30th June, 1926: Opium, 5 oz. 299 gr.; morphine, 229 gr.; cocaine, 1 oz. 458 gr. Permits have also been issued for the export of 9,800 lb. of dagga to London.

A permit for the cultivation of dagga for export for medical purposes has been issued to a farmer in the Koster area, Rustenburg district, Transvaal, and a permit has been issued to import hemp seed and cultivate hemp for fibre purposes on the Hibberdene Estate, South Coast, Natal.

During the year a Government Notice was issued notifying, in terms of No. 8 (1) (a) of the *Habit-forming Drugs Regulations*, the following as a medicinal preparation:—Eyedrops: cocaine, 0·5 per cent.; perchloride of

mercury in castor oil, 1 in 3,000. An amendment was also made by the addition of the following words at the end of the paragraph with regard to cocaine in Annexure A of the Regulations :—

“ except eyedrops required for inclusion in first-aid outfits under the *Factories Act*, No. 28 of 1918, consisting of a solution 1 in 3,000 perchloride of mercury in castor oil with 0·5 per cent. of cocaine.”

A considerable amount of smuggling of dagga from Swaziland and elsewhere, and of opium, chiefly from India through Delagoa Bay and Durban, has been going on despite active measures by the police. Several large seizures and important arrests have recently been made, and it is hoped that this traffic has been checked.

The Union Government in 1923 made strong representations to the League of Nations urging that Indian hemp (dagga) be added to the international list of dangerous narcotic or habit-forming drugs under the Opium Convention, and that the export of or international trade in the drug be made subject to the same restrictions and safeguards as in the case of opium. These representations were considered by the Opium Committee of the League. Difficulties appear to have arisen, but the matter was brought forward at several meetings of the committee, which eventually agreed to the proposals. The convention framed and agreed to by the Second Opium Conference held at Geneva in February, 1925, contains a special chapter dealing with Indian hemp and applying to it restrictions and safeguards similar to those in force with regard to opium.

6. *Traffic in Methylated Spirits and in Intoxicating Medicines.*—The recommendations of the Inter-departmental Conference summarized in the 1923 report have been incorporated in Chapter XIII of the *Liquor Bill* introduced by the Minister of Justice last Session; this Bill is still before Parliament. It also provides (clause 103) for the effective control of the prescribing of liquor by medical practitioners for natives and coloured persons, a matter which has caused a good deal of trouble in the Transvaal. The Bill contains no provision with regard to the sale of intoxicating medicines.

7. *Meat Inspection.*—The regulations published under Government Notice No. 2118 of 1924 have worked satisfactorily, and no difficulty has arisen except in regard to the matter of “measly” meat. The regulations provide that if even one or two “measles” parasites are found on inspection and examination, the carcass must be condemned unless it is subjected to cold storage for twelve weeks. Strong objections have been made by farmers’ associations and others in the eastern Cape Province districts urging some relaxation of these provisions. The views of the directors of both the Medical and Veterinary Research Institutes in the Union and leading health officers and veterinary surgeons are being obtained with a view to the whole matter being carefully reviewed and reconsidered, but the inquiries are not yet complete.

All local authorities have been circularized and requested to furnish particulars of the working of the regulations and the animals, carcasses, and meat dealt with during the year; 321 local authorities have furnished returns, of which 166 were “nil.” The following table summarizes the particulars furnished by the remaining 155 local authorities which furnished returns :—

TABLE V.—CARCASSES AND MEAT DEALT WITH IN SLAUGHTERHOUSES IN THE UNION DURING THE YEAR 30TH JUNE, 1926.

Disease.	Bovines.						Swine.						Sheep.						Goats.					
	Number Infected.			Condemned.			Number Infected.			Condemned.			Number Infected.			Condemned.			Number Infected.			Condemned.		
	Total Number Slaughtered.	Carcasses.	Live Animals.	Whole Carcasses.	Portions of Carcasses: Approx. Weight in Pounds.	Live Animals.	Total Number Slaughtered.	Carcasses.	Live Animals.	Whole Carcasses.	Portions of Carcasses: Approx. Weight in Pounds.	Live Animals.	Total Number Slaughtered.	Carcasses.	Live Animals.	Whole Carcasses.	Portions of Carcasses: Approx. Weight in Pounds.	Live Animals.	Total Number Slaughtered.	Carcasses.	Live Animals.	Whole Carcasses.	Portions of Carcasses: Approx. Weight in lb	
Actinomycosis....	—	280	45	—	7,127	—	—	—	12	3,618	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Anthrax.....	—	3	3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Blackleg (quarter-evil).....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bladderworm ("measles")....	—	3,827	—	1,774	182,890	—	—	—	6,752	48,010	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Blue-tongue.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
East Coast fever..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Erysipelas (acute swine).....	—	—	—	—	—	—	6	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Foot-and-mouth disease.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lamziekte.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lymphadenitis....	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malignant tumours or new growths	—	5	—	3	20	—	—	—	1	95	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mammitis.....	—	7	1	—	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Metritis.....	—	3	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pericarditis.....	—	385	—	8	1,736	—	17	—	1	95	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pneumonia.....	—	117	—	21	1,415	—	15	—	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pyæmia, including joint-ill or umbilical pyæmia	—	15	—	13	671	—	6	—	5	25	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Redwater.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ricketts.....	—	11	—	9	25	—	10	—	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sarcocysts.....	—	101	—	95	607	—	6	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Septicæmia.....	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Swine fever.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tetanus.....	—	3	—	3	—	—	6	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trichinosis.....	—	391	—	158	5,186	—	617	—	121	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculosis.....	—	250	—	1	2,364	—	12	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tumours.....	—	2	—	2	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Anaemia.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bruising, decomposition, drop-sy, emaciation, fever, immaturity, odour (urinous), jaundice, etc.....	—	8,182	39	927	306,029	39	854	35	375	4,693	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL.....	561,764	13,583	88	3,019	508,170	41	156,770	9,583	42	7,324	56,536	3	1,124,291	28,199	19	1,213	86,262	19	50,247	209	6	116	288	6

The foregoing table summarizes the work done in 393 slaughterhouses, 269 of which were controlled and managed by the local authority and 124 were private. Slaughtering facilities in many of the smaller towns and villages throughout the Union have been greatly improved during the past few years, but in many such places, and even in several of the larger centres, the arrangements are still very unsuitable and inadequate.

8. *Fruit Trade*.—In June, 1925, at the request of the Department of Agriculture and following on statements published in the London Press regarding the condition under which fruit packing is carried on in Smyrna and the Levant, a special inspection of fruit packing and drying establishments was made by an assistant health officer of the Department. These inspections showed that whilst the conditions at most of the larger establishments are satisfactory, this cannot be said of all; that the conditions on the premises of a good many of the smaller concerns and of some farmers who cut up and dry their own fruit are unsatisfactory; and that there is need for a more effective system of inspection and supervision from the point of view of cleanliness and sanitation. This is a matter to which the Department of Agriculture, the Inspector of Factories, the respective bodies of the fruit industry, and local authorities should devote increased attention. In the latter part of 1925, there were several prosecutions and convictions in England for selling fruit of American origin found, on analysis, to contain arsenic derived from the use of arsenical sprays. Investigations were instituted in conjunction with the Department of Agriculture, and it was found that some fruit produced in the Union also showed traces of spraying and containing arsenic, although no cases where harmful results followed the eating of such fruit were reported. The following notice was published in the Department's Bulletin for the week ended 13th March, 1926, and also in the Press throughout the Union:—

“USE OF SPRAYS—DESIRABILITY OF PEELING APPLES, PEARS, ETC.

“Attention has recently been called to the possibility of harm to consumers of fruit resulting from the practice of spraying fruit trees to prevent the fruit being destroyed by codling-moth. In the case of apples, pears, and quinces especially, traces of the substances used for spraying sometimes remain on the ripe fruit.

“Steps are being taken by the Department of Agriculture, the Fruit Exchange, and other organizations concerned to prevent the possibility referred to, but at the same time the public are urged to ensure that all apples, pears, and quinces are peeled before being eaten or cooked. Care should be taken to see that this precaution is observed in the case of children more particularly. The calyx scar or “eye” and the place of insertion of the stalk should be cut out and rejected with the peel.”

9. *Medical, Dental, Pharmacy, Nursing, and Midwifery Matters*.—The *Medical, Dental, and Pharmacy Bill* was again considered by Parliament during the 1925 Session, but got no further than the debate on the second reading. The Bill was first introduced in 1917, was then passed by the Senate, but the House of Assembly was unable to consider it before the end of the Session. No further action was taken until 1922, when the Bill was reintroduced, but not passed. It has been reintroduced annually since, with the same result. Apart from the clauses prohibiting unregistered persons from performing acts specially pertaining to the calling of a medical practitioner or a dentist, and a few minor points on which there are differences of opinion, the Bill is practically an agreed measure, having been framed in consultation with the medical councils, pharmacy boards, and other bodies and interests concerned. The administration of the existing Medical, Dental, and Pharmacy Laws of the four Provinces is a complicated and difficult matter; these laws are in many respects ambiguous or defective, and every year it is becoming increasingly difficult to carry on without a consolidating Union Act.

During the year a school of dentistry, with complete dental course, was opened and organized by the University of the Witwatersrand. At the end of June, the medical students in the Universities of Cape Town and the Witwatersrand numbered 445, the dental students 13, and students studying for the diploma in public health 10. The following table shows the registrations under the Medical, Dental, and Pharmacy Laws during the year ended 30th June, 1926, and the total numbers registered on that date:—

TABLE W—(i) REGISTRATIONS UNDER THE MEDICAL, DENTAL, AND PHARMACY LAWS DURING THE PERIOD 1ST JULY, 1925, TO 30TH JUNE, 1926.

Province.	Medical Practitioners.	Dentists.	Chemists and Druggists.	Mid-wives.	Trained Nurses.	Mental Nurses.	Total.
Cape.....	86	16	20	96	118	38	374
Natal.....	30	10	22	31	36	—	129
Transvaal.....	80	17	40	69	92*	1	299
Orange Free State.....	28	5	7	12	3	—	55
UNION.....	224	48	89	208	249	39	857
Total on register on 30th June, 1926.....	2,897	817	1,462	2,884	3,971	314	12,345

\* Including 6 male nurses.

The following table shows the registrations of midwives and trained nurses in the Union during the period 1920–25:—

TABLE W—(ii) REGISTRATION OF MIDWIVES AND TRAINED NURSES DURING THE SIX YEARS 1920 TO 1925.

Year.	Cape of Good Hope.		Natal.		Transvaal.		Orange Free State.		Union of South Africa.	
	Passed Council Examination.	Registered on Overseas Certificate.	Passed Council Examination.	Registered on Overseas Certificate.	Passed Council Examination.	Registered on Overseas Certificate.	Passed Council Examination.	Registered on Overseas Certificate.	Passed Council Examination.	Registered on Overseas Certificate.
	Midwives.									
1920.....	59	23	20	14	73	21	11	5	163	63
1921.....	77	36	19	7	75	18	14	3	185	64
1922.....	69	27	24	9	81	17	13	4	187	57
1923.....	82	12	18	5	74	16	15	1	189	34
1924.....	75	7	16	3	74	11	11	2	176	23
1925.....	73	22	22	6	70	3	14	—	179	31
TOTAL.....	435	127	119	44	447	86	78	15	1,079	272
	Trained Nurses.*									
1920.....	91	29	27	16	73	19	3	4	194	68
1921.....	71	54	31	10	82	34	7	2	191	100
1922.....	93	36	26	9	83	29	5	3	207	77
1923.....	68	12	36	5	52	22	9	1	165	40
1924.....	88	9	38	6	64	16	8	2	198	33
1925.....	77	23	32	6	72	7	8	1	189	37
TOTAL.....	488	163	190	52	426	127	40	13	1,144	355

\* Figures do not include registrations of midwives and trained nurses who applied for registration in a Province by virtue of holding the certificate of one of the other Provinces.

Some of the medical practitioners and dentists remaining on the register have ceased to practise, but the number is not large. The figures with regard to midwives and trained nurses in the foregoing tables, however, are very misleading. A large proportion of these has failed to notify changes of address since first registration, and since then many of them have, for one reason or another, ceased to practise their calling. A considerable proportion of those who take the midwifery course and pass the Medical Council's examination are trained nurses who never intend to practise as midwives. The general position remains as stated in the 1924 report; the supply of midwives and the facilities for training them are still very inadequate. Under these circumstances the training facilities should be utilized to the best advantage and, as far as possible, only for the training of women who definitely intend or undertake to practise midwifery.

10. *Nursing and Maternity Homes*.—The system of registration and inspection described in previous reports has been continued. The following table summarizes the work done during the year:—

TABLE X.—NURSING AND MATERNITY HOMES : INSPECTIONS DURING THE YEAR ENDED 30TH JUNE, 1926.

Place.	Total Number.	Number Inspected.	
		By Medical Officer of Local Authority.	By Government Health Officer.
<i>Cape Province</i> —			
Cape Town.....	18	15	—
East London.....	8	8	—
Port Elizabeth.....	11	—	8
Elsewhere.....	56	—	—
<i>Natal Province</i> —			
Durban.....	19	18	—
Pietermaritzburg.....	8	8	—
Elsewhere.....	15	—	4
<i>Transvaal Province</i> —			
Witwatersrand.....	39	26	—
Pretoria.....	4	—	—
Elsewhere.....	18	—	—
<i>Orange Free State Province</i> —			
Bloemfontein.....	4	—	—
Elsewhere.....	15	—	—
UNION.....	215	75	12

The regulations and the statutory powers under which they are made are defective in that there is no power to refuse or suspend registration; it is proposed in the *Public Health Amendment Bill* to empower the Minister to refuse to register or to suspend the registration of any home which is unsatisfactory as regards construction, equipment, staff, or otherwise, and to prohibit any person carrying on any nursing or maternity home unless registered.

The ignorant and often dirty untrained midwife continues to levy a heavy annual toll on the mother and infant life of the Union. Such persons do not come under the purview of the medical councils, and local authorities have

at present little or no powers of supervising them. It is proposed to include in the *Public Health Amendment Bill* provisions empowering local authorities to exercise such supervision and, with the concurrence of the Minister, to prohibit from practising as a midwife any person whose so practising would be prejudicial or dangerous to the public health.

11. *General Hospitals*.—The last annual report gave particulars of the Hospital Inquiry Committee appointed by Government in October, 1924, and a summary of its report submitted in March, 1925 (G.N. 30—'25), including recommendations that the Union Government should take over from the Provincial Administrations all public hospitals and kindred institutions, the administration of these to be carried out by a special branch of this Department, with the assistance of an advisory board, and that medical inspection of school children and child welfare should also be made Union responsibilities to be carried out by this Department. The committee expressed the opinion that hospitals, school medical inspection, and child welfare matters are integral and essential parts of public health administration and should be dealt with as such; that the existing arrangements are an unworkable tangle of conflicting and overlapping jurisdictions; and that the system of administration should be such as to secure the co-operation of the various curative institutions and agencies with the preventive and public health organizations. The Government, however, on broader considerations of policy, and in view of the fact that a revised general scheme of financial and other arrangements with the Provinces had been agreed to only a few months before, decided not to act on the recommendations of the committee. At a conference between the Minister of Public Health and Administrators held in Cape Town in January, 1926, it was agreed that this Department should organize and carry out a "hospital survey" of the Union for the information and guidance of Provincial Administrations and also advise these administrations on hospital schemes and matters, appointing for this purpose a medical inspector of hospitals, who would periodically inspect and report on hospitals and investigate and report on hospital construction and extension schemes. Steps to carry out these arrangements are being taken. This Department will do everything possible to assist the provincial authorities in these matters, but it will act in a purely advisory capacity, administrative responsibility and control resting entirely with the Provincial Administrations.

From the standpoint of public health policy and progress, the Government's decision against the adoption of the Hospital Committee's recommendations is regretted, and also it is felt that a favourable opportunity, which may never recur, has been missed. At the time the opinion of hospital boards, the medical profession, and the Press strongly supported the committee's recommendations, and the balance of opinion amongst provincial authorities also favoured the transfer. Even if the opportunity should recur, a great forward step in public health and social welfare organization and development will have been delayed and inevitably made more difficult. The really important element of the matter is not hospital administration *per se*, but the *dovetailing and co-ordination of prevention and cure all along the line*. In regard to infectious and communicable disease (the hospitalization of cases of enteric or venereal diseases, for instance), prevention and cure are complementary and inseparable. Under present administrative conditions we are really trying to divide the indivisible. There is the further important and fruitful consideration that once financial and general responsibility for prevention on the one hand, and cure or dealing with the consequences of failure to prevent on the other, rests with one and the same authority, that authority soon comes to realize that prevention is both best and cheapest.



12. *National Health Insurance*.—In March, 1926, the Government appointed a commission to inquire into and report upon, *inter alia*, “a system of national insurance as a means of making provision for the risks of sickness, accident, premature death, invalidity, old age, unemployment, and maternity.” The Secretary for Public Health gave evidence before that commission in October, 1926, and also assisted the commission in preparing a questionnaire, which has since been circulated to the medical profession. The commission is continuing its investigations.

13. *Vaccines, Sera, Pathogenic Cultures, etc.*—Twelve permits under the regulations (G.N. No. 2306 of 1920) were issued during the year, ten being to bacteriologists conducting laboratories and two being in respect of the importation of calf vaccine lymph.

14. *Dental Caries and “Deficiency” Diseases*.—Dental caries and conditions affecting health and development associated with deficiency of vitamins or lime salts or other organic compounds have been attracting in recent years considerable attention in other countries. Hitherto very little has been done in South Africa. During the year the Department undertook a preliminary investigation with a view to collecting information and data. Pamphlets on the subject of dental caries and the elementary principles of feeding and dietetics were being prepared for publication. The matter was considered by the Council of Public Health at its last meeting, and the following resolution passed:—

“This Council desires to emphasize the urgent need for biochemical research in South Africa in regard to human growth and development and the causation of ‘deficiency’ and other diseases, and the desirability of disseminating among the people a knowledge of the elementary principles of healthy dieting.”

15. *Sanitary Inspectors, Health Visitors, etc.*—For several years past it has been recognized that the arrangements in the Union for the training and examination of sanitary inspectors, etc., were not entirely satisfactory. Following on preliminary discussion and correspondence with the Royal Sanitary Institute of Great Britain, a conference between representatives of that body and the Union Departments of Education and Public Health was held in January, 1926, at which it was agreed to establish a joint organization of the Union Government and Royal Sanitary Institute for the training, examination, and certification of sanitary inspectors, meat inspectors, and health visitors, the South African Board of Examiners of the Royal Sanitary Institute to function as hitherto, but the two departments mentioned to appoint representatives on the board and co-operate therewith, the fact of such co-operation being indicated on the form of certificate. These arrangements have since been confirmed and approved by all concerned, and the first examination under the new system will shortly be held. The Union Department of Education, through its technical colleges, is in a position to give valuable assistance and greatly improved facilities for teaching and training. Persons obtaining the certificate issued jointly by the Union Government and Royal Sanitary Institute will have a qualification of high standard which will hold good not only in South Africa, but in Great Britain and other British dominions and colonies.

16. *Cancer*.—This disease seems to be on the increase in most civilized countries, and from the available data and statistics (which are very incomplete) South Africa would appear to be no exception to what seems a general tendency. The Institute of Medical Research has recently undertaken to go into the

matter by circulating a questionnaire to selected medical men in the Union and afterwards pursuing inquiries in specific directions, probably in a few selected forms of malignant disease. The Institute is acting in co-operation and consultation with the Imperial Cancer Research Institute and the Cancer Committee of the League of Nations.

During the visit of the Secretary for Public Health to Europe in September and October, 1925, he had interviews in Paris with the French Minister of Public Health and the organizing secretary of the Franco-Anglo-American Anti-Cancer League. This is a body with headquarters in Paris, which, with Government approval and support, carries on very useful popular propaganda and educative work and a certain amount of investigation and relief work in connexion with cancer. The Secretary of the League strongly urged the establishment of a branch in South Africa and offered assistance and co-operation. A certain amount of publicity and educative work has been done in South Africa by the Red Cross Society, which recently issued and widely distributed a useful little pamphlet with regard to cancer. There is, however, need for much more work of this kind, which could best be done by an influential and representative voluntary society or branch of the above-mentioned League subsidized and assisted by the Government.

South Africa is still a happy hunting-ground for the "cancer-curer" and the vendor of patent nostrums. In a large proportion of the cancer cases dealt with in public hospitals, the disease, when first seen, is already well advanced, so that the chances of successful treatment are reduced, or so far advanced that curative treatment is impossible, the delay in seeking competent advice and treatment being often due to the "cancer-curer." In not a few cases of disease in Europeans, especially in the rural areas, the disease runs its course and the patient dies without ever having been seen by a medical man. The matter was discussed at the last meeting of the Council of Public Health and the following resolution passed:—

"That, in the opinion of this Council, it is desirable that the essential facts regarding cancer and the importance of early discovery and of competent medical advice and treatment of the disease should be systematically brought to the notice of the public throughout the Union, and that the aid of the Red Cross and other organizations should, if possible, be secured in this investigation."

17. *Military Hospitals and Medical Services.*—(a) *General.*—The following table shows the number of patients under treatment at the beginning and the end of the period covered by the report:—

TABLE Y.—(i) NUMBER OF MILITARY CASES, INCLUDING EX-SOLDIERS, MEMBERS OF THE SOUTH AFRICAN POLICE AND PRISONS DEPARTMENTS, ETC., AS AT 1ST JULY, 1925, AND 1ST JULY, 1926.

	1st July, 1925.				1st July, 1926.			
	Union Defence Force.	S.A. Police, Prisons, etc.	Ex-soldiers.	Total.	Union Defence Force.	S.A. Police, Prisons, etc.	Ex-soldiers.	Total.
Military hospitals.	58	35	88	181	33	31	84	148
Civil hospitals.	6	—	23	29	6	—	—	6
	64	35	111	210	39	31	84	154

The above figures exclude ex-soldiers treated in the mental hospitals. During the year the total admissions of members of the Government forces and ex-soldiers to the military hospitals was 2,100, as compared with 2,304 in the previous year; discharges, 2,133, as compared with 2,330; and deaths in hospital, 27, as compared with 26. The daily average cost per patient was approximately 11s., inclusive of the cost of medical attendance.

The following table shows the average daily number of patients treated in military hospitals and diseases from which they suffered:—

TABLE Y.—(ii) DAILY AVERAGE NUMBER OF CASES TREATED IN MILITARY HOSPITALS, YEAR ENDED 30TH JUNE, 1925, AND 30TH JUNE, 1926.

Disease	Year ended 30th June, 1925.				Year ended 30th June, 1926.			
	Union Defence Force.	S.A. Police, Prisons, etc.	Ex-soldiers.	Total.	Union Defence Force.	S.A. Police, Prisons, etc.	Ex-soldiers.	Total.
Malaria.....	0·7	0·7	30·7	32·1	0·1	0·8	27·8	28·7
Venereal disease...	12·1	2·0	—	14·1	10·2	2·6	—	12·8
Influenza...	4·7	2·9	—	7·6	3·7	0·6	—	4·3
Wounds....	0·4	1·3	17·1	18·8	0·8	0·9	13·4	15·1
Other injuries...	13·9	7·7	3·0	24·6	10·9	7·2	2·7	20·8
Dysentery..	0·3	0·4	4·1	4·8	0·1	—	2·8	2·9
Enteric.....	0·4	—	0·8	1·2	—	0·2	0·2	0·4
Tuberculosis	0·3	0·2	24·8	25·3	—	0·3	12·0	12·3
Cardiac.....	0·2	0·4	8·0	8·6	0·1	0·2	4·0	4·3
Other causes	27·9	26·2	33·7	87·8	19·6	24·2	24·2	68·0
	60·9	41·8	122·2	224·9	45·5	37·0	87·1	169·6

It will be noted that the daily average number of patients treated during the year ended 30th June, 1926, was 169·6, as compared with 224·9 for the year ended 30th June, 1925. An all-round decrease has taken place, which is as follows:—

Serving soldiers.....	15 per diem.
South African Police and Prisons.....	4 „
Ex-soldiers.....	35 „

(b) *Medical Examination of Recruits.*—During the year ended 30th June, 1926, a total of 5,620 recruits for the Active Citizen Force were examined; 1,411 of these were rejected as permanently and 186 as temporarily unfit, the percentages being: passed as fit, 71·58; temporarily unfit, 3·31; permanently unfit, 25·11. The principal causes of rejection were: defective eyesight, 387; diseases or defects of the organs of locomotion, 237; defective teeth, 232; heart diseases and defects, 197; poor physique or undersized, 137. The returns from the different centres show wide variations; it is obvious that the standard of fitness observed by the examining medical officers is not a uniform one and is influenced to a considerable extent by the number of potential recruits available from whom the quota of the centre is to be selected.

The standard for the Permanent Force is higher and more uniform; these recruits are examined first by the district surgeon and subsequently, except in the case of recruits from Pretoria, by the military medical officers at Roberts Heights or Wynberg; but the numbers are small. During the year ended 30th June, 1925, 275 such recruits were examined, of whom 131, or 47·6 per cent., were rejected. During the year ended 30th June, 1926, 352 were examined, of whom 142, or 40·3 per cent., were rejected as medically unfit.

(c) *Central Medical and Veterinary Stores.*—Drugs, dressings, and surgical and medical appliances required by Government hospitals and similar institutions, or by Government departments, are obtained through the Central Medical and Veterinary Stores. The system has worked well and results in a large saving to the Government. Fairly large stocks have to be held as mobilization stores by the Defence Department. The system enables the stock to be turned over with a minimum of deterioration.

(d) *Artificial Limb Factory.*—The factory is still working under very great pressure, and the number of new cases dealt with has considerably increased during the past year. This has necessitated a small further increase in the staff.

The manufacture of light metal limbs has been carried out during the year. Unquestionably this type has proved more satisfactory in every way than the old one made of wood, and the change has been much appreciated by the ex-soldier. Although the metal limb costs approximately 40 per cent. more than the wooden limb, it is estimated from experience to date that the cost of repairs will be very much less and that the limb will have a much longer life.

The following table summarizes the work done in the factory during the last four years :—

TABLE Z.—ARTIFICIAL LIMB FACTORY, JOHANNESBURG : WORK DONE DURING THE FOUR YEARS ENDED 30TH JUNE, 1926.

Year Ended.	Repairs to Artificial Limbs, Boots, and Appliances.	New Limbs, including Peg Legs.	New Surgical Boots.	New Apparatus, other than Limbs and Boots.	Total Jobs Completed.
1923.....	661	93	200	88	1,042
1924.....	761	107	249	126	1,243
1925.....	836	85	308	184	1,413
1926.....	997	181	361	193	1,732

From the above it will be seen that the total jobs completed in excess of those completed in the previous year was 319. The number of repairs to artificial limbs, boots, and appliances has exceeded the previous year's figures by 161. The output of limbs has increased by 96, new surgical boots by 53, and new apparatus other than limbs and boots by 9.

The work done at the factory has given general satisfaction to all ex-soldiers. The limbs and appliances generally are thought to be somewhat above the standard of those supplied in any other country, the orthopaedic boots being exceptionally good.

## ANNEXURE "A."

## COUNCIL OF PUBLIC HEALTH.

The following were the principal Resolutions passed by the Council:—

(1) *Training and Certification of Sanitary Inspectors :*

"This meeting approves generally of the joint scheme between the Government and the Royal Sanitary Institute regarding the training, examination, and certification of sanitary inspectors."

"That this Council recommends the publication of the revised edition of Dr. Reid's textbook on Sanitation and Public Health, in both English and Afrikaans."

(2) *Tuberculosis :*

"This Council recommends that in order to prevent the spread of infection, it is desirable that provision for advanced cases of tuberculosis of such nature or so circumstanced as specially to endanger the public health should be made in connexion with general hospitals, and that where possible special wards for this purpose should be provided."

(3) *Malaria :*

"That, in the opinion of this Council, in the interests both of health and the agricultural and economic development of the country, an anopheline survey of the Union should be undertaken at once and carried out with all possible dispatch."

(4) *Cancer :*

"That, in the opinion of this Council, it is desirable that the essential facts with regard to cancer and the importance of early discovery and of competent medical advice and treatment of the disease should be systematically brought to the notice of the public throughout the Union, and that the aid of the Red Cross and other organizations should, if possible, be secured in this connexion."

(5) *Need for Biochemical Research :*

"That this Council desires to emphasize the urgent need for biochemical research in South Africa in regard to human growth and development, the causation of 'deficiency' and other diseases, and the desirability of disseminating among the people knowledge of the elementary principles of healthy dieting."

(6) *Housing :*

"1. That further funds should be provided for loans to local authorities under the Housing Act.

"2. That steps should be taken to exempt from the operation of Agreements under the *Industrial Conciliation Act, 1924*, persons employed by or on behalf of local authorities in constructing dwellings intended for native or coloured occupation on lands set aside for the purpose by the local authority."

(7) *Town Planning :*

"That this Council regrets the delay that has already taken place in dealing effectively with the problem of town planning, and urges that the Provincial Councils should, as soon as possible, make use of the powers they now possess for dealing with this matter under Section 17 of Act No. 46 of 1925."

(8) *Report of the Hospitals Committee of Inquiry :*

“That this Council regrets that the Government has not seen its way to accept the recommendations in the report of the Public Hospitals Inquiry Committee in regard to hospital administration and cognate matters, and urges the Government to reconsider the matter.”

(9) *Draft Bill to Amend the Public Health Act :*

“That this Council approves generally of the proposals in the Bill, with the amendments agreed upon during the discussion. It regards the proposals for exempting conscientious objectors to vaccination as the best practicable under the existing conditions in the Union seeing that successive Governments have declined to enforce the present law on the subject, but it desires to confirm the Resolution on the subject passed at its meeting in December, 1920. That Resolution was as follows:—

This Council, after considering the provisions of the *Public Health Act*, No. 36 of 1919, with regard to vaccination, is of opinion that there should be no weakening in the measures for their enforcement, and desires to place on record its considered opinion that the amendment of the Act by a ‘conscience clause’ permitting the evasion of any of its vaccination requirements would be fraught with danger to the public health of both the white and the coloured populations.”

(10) *Bubonic Plague :*

“This Council is of opinion that when the Department of Public Health calls upon a rural local authority to destroy wild veld rodents, a proportion of the cost should be defrayed from the public revenue.”

The other subjects discussed by the Council included international health matters and the establishment of health intelligence bureaux, leprosy, and venereal diseases.

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ANNEXURE “B.”

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REVISION OF INTERNATIONAL SANITARY CONVENTION.

MEMORANDUM BY DR. J. A. MITCHELL, SECRETARY FOR PUBLIC HEALTH AND  
CHIEF HEALTH OFFICER, UNION OF SOUTH AFRICA.

(*Submitted to the Committee of the Office International d'Hygiène Publique,  
Paris, October, 1925.*)

The following observations on the general principles of the Convention as now revised, which are considered to be of special importance, are submitted for consideration, together with some suggestions for amendment of the revised draft which may be made at the Conference on behalf of South Africa, if these suggestions are not covered by the proposals of other Delegates:—

- (1) That the new Convention should be framed on the lines of the draft prepared by the Office International d'Hygiène Publique.
- (2) That a Central Health Intelligence Bureau should be established with such subsidiary or branch bureaux as may be found necessary; the requisite funds for this purpose to be contributed by the signatory countries.
- (3) That the Bureau should have an adequate staff and facilities for promptly receiving and distributing essential Health information.
- (4) That all such information of an urgent nature should be transmitted to distant countries by telegraph or wireless.
- (5) That each signatory country should undertake to furnish annually to the Bureau specified particulars regarding health staff, organization, and facilities at each of its ports; this information to be transmitted by the Bureau to all signatory countries and to be taken into consideration by port authorities when dealing with arriving vessels. (South Africa would not favour any proposal that the Central Bureau or other similar body should classify ports for the purposes of the Convention, or that each country should so classify its own ports.)

- (6) That whilst the essential object of the Convention is to prevent the dissemination of epidemic disease, the importance of avoiding delay, inconvenience, or expense to vessels and passengers should be kept constantly in view when framing it and carrying it out.
- (7) That with the development of a prompt and efficient Health Intelligence system, "Bills of Health" will become redundant to an increasing extent and might consequently be abolished altogether. If retained, they should be on a simple and uniform international form, and consular visas should not be required.
- (8) That "Declarations of Health" signed by the Master of the vessel, and countersigned by the Ship's Surgeon (if one is carried) giving all essential information regarding the presence or absence of infectious disease on board, should be furnished if asked for by the Health Authority of the port of arrival. Wilful misstatements or material omissions in such declarations should be a punishable offence. Such declarations should preferably be on a uniform international form.
- (9) South Africa is not included in the "Far East," but it has close shipping relations with far-eastern countries and is one of the gateways of entrance to and exit from the Far East. It is therefore interested in the proposal to include in the Convention a special chapter with regard to the Far East.
- (10) All terms requiring definition used in the Convention should be defined, and the definitions should be set out in a separate Article at the commencement of Chapter I. The Article might be framed somewhat as follows:—

*Definitions.*—Throughout this Convention, except where the context otherwise requires, the following words and phrases shall have the meanings herein assigned to them:—

Then would follow the definitions of "Foyer," "Observation," "Surveillance," etc. "Rats" should be defined as including all rodents or other animals susceptible to plague. "Smallpox" should be defined as including "Alastrim," "Amaas," "Varioloid," and all other diseases resembling smallpox, except chicken-pox.

- (11) Observations and suggestions with regard to material points in particular Articles. (The numbers given refer to the draft prepared by the Committee of the Office International d'Hygiène Publique.)

Art. 1. Plague in rodents should be similarly notifiable. This amendment is regarded as of vital importance. The notification should be to the Central Bureau, which should then distribute the information to all concerned. Subsequent Articles should be amended to correspond.

Art. 5. Delete "to reply to any requests for information" and substitute "to furnish all available or procurable information."

Art. 11. The provisions in regard to plague are not in accord with the known facts. It is suggested that the Article be deleted.

Arts. 20 (3), 21, and 22, last lines. Delete "on duty" and substitute "on some emergency affecting the safety of the ship unless in possession of a permit issued by the Port Health Authority."

Art. 23. It is presumed that "deratization" does not in all cases mean fumigation or other measure entailing delay or heavy expense to vessels. If on the contrary it does mean this, it is considered that this Article would impose unnecessary and irksome restrictions on shipping. Provision should be made for keeping lighters and similar craft free from rats.

(It is considered that in designing new ships, attention should be paid to rendering them as rat-proof as possible, and facilities should be provided for rat destruction. The Convention should be framed so as to encourage the provision of such facilities. If ships were constructed on rat-proof lines and provided with special chambers or spaces, easily accessible to rats, where they could find attractive cover and food, but which could be easily shut off when desired and the rats therein caught and examined, any rats finding their way on board could be utilized as "sentinels" or detectors of plague infection.)

Art. 37. See general observation No. 8.







